

The Political Economy of Agricultural Policy Reform in India

The Case of Fertilizer Supply and Electricity Supply for Groundwater Irrigation

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March 2007



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Abbreviations

AP	Andhra Pradesh
APERC	Andhra Pradesh electricity Regulatory Commission
APFMIS	Andhra Pradesh Farmers Management Of Irrigation Systems
APGENCO	Andhra Pradesh Power Generation Corporation Ltd.
APRDP	Accelerated Power Reform and Development Programme
APTRANSCO	Transmission Corporation Of Andhra Pradesh
APTRIPCO	Andhra Pradesh Tribal Power Company Ltd.
APWALTA	Andhra Pradesh Water and Land Trees Act.
AT&C	Aggregate Technical and Commercial Losses
BJP	Bharatiya Janata Party
CPI	Communist Party of India
CPI (M)	Communist Party of India (Marxist)
CRISIL	Credit Rating Information Services of India
CSO	Central Statistical Organization
DFID	Department For International Development
DISCOMS	Distribution Companies
DoAC	Department of Agriculture and Cooperation
DoF	Department of Fertilizers
EPW	Economic and Political Weekly
ERC	Expenditure Reforms Commission
FAI	Fertilizer Association of India
FFAAP	Federation of Farmers Associations in Andhra Pradesh
FICC	Fertilizer Industry Coordination Committee
GMC	Groundwater Management Committees
GoAP	Government of Andhra Pradesh
GoI	Government of India

GoP	Government of Punjab
HVDS	High Voltage Distribution System
HYV	High Yielding Variety
ICRA	Investment Information and Credit Rating Agency
IFI	International Financial Institution
IMWI	International Water Management Institute
IPP	Independent Power Producer
KPMG	Klynveld Peat Marwick Goerdeler advisory services
LPDGO	Local Power Distribution or Generation Organizations
MoA	Ministry of Agriculture
MoCF	Ministry of Chemicals and Fertilizers
MoF	Ministry of Finance
MoPNG	Ministry of Petroleum and Natural Gas
MP	Member of Parliament
NDA	National Democratic Alliance
NIPFP	National Institute of Public Finance and Policy
NSS	National Sample Survey
NTR	N.T. Ram Rao (former Chief Minister of Andhra Pradesh)
PAU	Punjab Agricultural University
PIM	Participatory Irrigation Management
PM	Prime Minister
PMGER	People's Monitoring Group On Electricity Regulation
PPA	Power Purchasing Agreements
PSEB	Punjab State Electricity Board
PSERC	Punjab State Electricity Regulatory Commission
SAD	Shiromani Akali Dal (state party in Punjab)
T&D	Transmission and Distribution
TDP	Telugu Desam Party (state party in Andhra Pradesh)

TERI	Energy and Resources Institute, New Delhi
TRS	Telangana Rashtriya Samiti (state party in Andhra Pradesh)
USAID	United States Agency For International Development
WENEXA	Water and Energy Nexus
WUA	Water User Association
YSR Pradesh)	Dr.Y.S. Rajaskekhara Reddy (current Chief Minister of Andhra Pradesh)

Acknowledgement

The authors would like to express their heartfelt thanks to all stakeholder representatives, policy-makers and experts who were interviewed for this study. We greatly appreciate the time and effort they took to share their knowledge, experiences and insights on this challenging topic. Special thanks are due to Ashok Gulati for encouraging this study, and to the IFPRI team in the Delhi Office for their kind and competent support.

Executive Summary

Problem Background

This report analyzes the political economy of two important fields of agricultural policy in India: fertilizer supply and electricity supply for groundwater irrigation. Both fertilizer and groundwater play an important role for food production and agricultural development, which have been core areas of concern for policymakers in India since Independence. In view of food shortages and the political problems associated with food imports in the 1960s, the Government of India put in place a set of policies in order to increase food production. Encouraging the production and consumption of fertilizer and the use of groundwater played an important role in this context. While the policy framework was successful and achieved the intended goal of enhanced food production and food security, subsidizing fertilizer and electricity has become subject to increasing criticism during the past decade: The subsidies impose an increasing fiscal burden on the state. Since these input subsidies are price subsidies, larger farmers benefit more from them than smaller farmers. Moreover, both input subsidies are associated with environmental problems: In case of fertilizer, major problems include an unbalanced use of nutrients as well as regional disparities in fertilizer use. The electricity subsidies reduce the incentives to conserve groundwater and to manage groundwater and surface water jointly. Both subsidies also have problematic effects at the level of the industries supplying these inputs. In case of fertilizer, they lead to an inefficient allocation of scarce resources such as natural gas. In case of electricity, they discourage investment in rural electricity infrastructure, which results in low-quality supply of electricity to farmers. Such economic, distributional and environmental concerns are typical for agricultural input subsidies. Thus, the two types of subsidies analyzed in this report—fertilizer subsidies and electricity subsidies for irrigation—are case studies of the general problems of subsidizing agricultural inputs. However, the two cases also demonstrate that the political challenges of reforming such policies are complex and in many regards specific to the input in question. Moreover, the two cases illustrate the challenges of policy reform at both the national level and the state level. In India's federal system, fertilizer policy is a central-level policy, while electricity policies are largely made at the state level.

Both fertilizer supply and electricity supply to agriculture have been subject to considerable reform efforts during the past decade. The Government of India carried out reforms related to potassic and phosphoric fertilizers in the early 1990s. In case of nitrogenous fertilizer, various reform efforts have been directed toward production and distribution as well as farmgate pricing of nitrogenous fertilizers. However, the

elaborate Retention Price-cum-Subsidy Scheme that governs the production and distribution of nitrogenous fertilizers has been the most difficult to reform. Increasing the farmgate price of nitrogenous fertilizers has also, predictably, met with immense resistance. Hence, in spite of all reform efforts, the central government's subsidies on fertilizers have been increasing steadily over the past decade and a half.

Various reform efforts spread over the last decade that aimed at addressing the problems of electricity supply to agriculture have also been largely unsuccessful. In spite of an official commitment of the Indian states made more than a decade ago to reduce the electricity subsidies to agriculture, the number of states that supply electricity to farmers even free of charge is increasing. At the same time problems of over-extraction of groundwater have become more serious. Problems regarding the quality of electricity supply also persist. Even in states that have made considerable progress in reforming the energy sector, such as Andhra Pradesh, farmers' organizations claim that the quality of electricity supply to agriculture has not been improved.

The political challenges of reforming the policies governing fertilizer supply and electricity supply to agriculture are aggravated by the fact that they cut across several overlapping policy fields: fiscal policy, energy policy, agricultural policy, irrigation and water resources policy and environmental policy. Hence, efforts to reform fertilizer and electricity supply to agriculture are intertwined with the highly contested reform efforts in all these policy fields.

Objectives and Approach

Against this background, the objectives of the present report are

- (a) to analyze why past efforts to reform the policies governing fertilizer supply and electricity supply to agriculture had limited success in resolving the economic, distributional and environmental problems associated with these policies;
- (b) to identify reform options that have the potential to overcome these problems and to assess their political feasibility, and
- (c) to identify political processes and strategies by which reforms can be achieved.

This study builds upon the substantial existing literature on the political economy of power sector reforms and reforming the electricity supply to agriculture in India (Lal, 2006; Dubash, 2004; Dubash and Rajan 2001, Shah et al., 2003). These studies have

mostly taken an interest group approach, which focuses on the material interests of different groups in the agricultural sector, the power sector and the bureaucracy, and on the interests of politicians to be reelected. Historical developments and issues of political and bureaucratic culture have also been addressed in these studies.

Relatively less has been written on the political economy of fertilizer policy reforms in particular. Several economic studies suggest using an interest group approach (Kumar, 1999; Gulati and Narayanan, 2003; NIPFP, 2004) while others point to statist explanations (Sen and Venkateshwarlu, 2002). Several studies also suggest the role of coalition politics in the failure of reform in this issue area (Bardhan, 2003; Singh, 2004; Jenkins, 2005; Guha Thakurta and Raghuraman, 2004).

The present study departs from the existing literature in several regards: First, the study takes into account that politics is driven by interests, institutions and ideas. Hence, in addition to analyzing interests and electoral politics, the study examines the role that knowledge, beliefs and worldviews play in shaping the politics on fertilizer supply and electricity supply to agriculture. The study also systematically examines the role of institutional factors such as inter-bureaucratic and coalition politics. Second, the study examines the policy reform both at the national and state level. Fertilizer policy reform is a case study of agricultural policy at the central level. The reform of electric supply to agriculture is analyzed in Indian states, Punjab and Andhra Pradesh. In both states, electricity supply to groundwater is important, but the states differ considerably in their approach towards reforms. Third, rather than concentrating on the “first-best option” of increasing the electricity price paid by farmers and introducing metering of agricultural electricity connections, the study evaluates the political feasibility of a range of alternative and complementary policy options to meet equity, efficiency and sustainability goals, including options that are considered “second-best” from the perspective of neo-classical economics. The same approach was applied regarding the production and distribution of fertilizers. Fourth, the study discusses a range of policy processes by which reforms may be achieved in spite of political resistance. Fifth, the study pays particular attention to the role that research-based knowledge can play in promoting policy reform.

The analysis presented in this report is based on an extensive review of the literature, including policy documents and newspaper reports. In addition, for the analysis on fertilizer production and distribution, interviews with 35 stakeholders and key informants were conducted. For the analysis on electric supply, the study relies on interviews with 75 stakeholders and key informants from the electricity sector, the agricultural sector and the groundwater sector in Andhra Pradesh, Punjab and at the national level. The conceptual framework used for the analysis is informed by the

Advocacy Coalition Framework (Sabatier and Jenkins-Smith, 1993) and the comparative politics literature on the politics of economic reforms.

Major findings

Reform of policy on production and pricing of nitrogenous fertilizers

In order to reduce the fertilizer subsidies paid out by the central government, two reform approaches have been tried: First, the government has attempted to reform the policy framework governing the production of fertilizers to alter the incentives given to private and public domestic firms engaged in fertilizer production. Second, the government has tried to increase the price at which nitrogenous fertilizers are made available to Indian farmers. The analysis of these reforms of the fertilizer policy and pricing framework indicate that two major factors account for the lack of success of these reforms: interest group politics and a clash of ideas. The government's ability to raise farmgate prices has been constrained by coalition politics and by political representatives of owners of medium and large farms. The government has also not been able to target the subsidies more narrowly on small and marginal farmers due to opposition from owners of medium and large farms and due to logistical problems perceived to be associated with targeting. The policy framework for production and distribution of fertilizers could not be reformed because of the presence of a strong coalition consisting of the fertilizer industry, the Ministries of Chemicals and Fertilizer as well as Agriculture, which has successfully argued that policy reform would negatively affect India's self-sufficiency in fertilizer production and through it, India's food security. The reform process has also been complicated by the inadequate supply of natural gas in India. The advocates for change in policy are fewer and less articulate and consistent in their message. The analysis indicates that interest group politics alone do not explain the lack of reform success. One has to take into account the role that the concepts of food security and food-self sufficiency play as powerful ideas in the agricultural policy discourse in India, motivated by the Green Revolution experience.

Reform of policy on electricity supply to agriculture

The analysis of the political processes underlying electricity policies in Andhra Pradesh and Punjab also indicates that both interest group politics and political ideas are important in explaining political outcomes. The research largely confirms major findings of earlier studies that used an interest group approach: Reforms have been hindered by politically powerful interest groups and by the nature of electoral competition at the state level. Path-dependent developments, especially the

abolishment of metering in the 1980s do play an important role, too. However, the analysis also shows that reforms have been hindered by the clash of two value- and belief systems, or paradigms, that are important in Indian politics: On the one side of the spectrum are those who believe that the market forces will provide the ultimate solution to both the economic and the environmental problems associated with the electricity supply to agriculture, and that state intervention—in view of inherent state failure—should be limited to a minimum (market-oriented paradigm). On the other end of the spectrum are those who believe that the market failures inherent in electricity supply and groundwater use make it necessary for the state to play an active role in protecting both the farmers and the environment (welfare state-oriented paradigm). In the welfare state-oriented paradigm, electricity subsidies are seen as an instrument of intersectoral income redistribution between the non-agricultural and the agricultural sector. A public discourse that highlights farmers’ suicides and “agrarian distress” increases the political motivation to pursue this policy goal. The political appeal of using electricity pricing as an instrument for intersectoral income redistribution lies in the fact that—unlike other policy instruments, such as conditional cash transfers—making electricity free does not require any implementation by the bureaucratic apparatus with all associated problems of time lag and leakage. In the market-oriented paradigm, however, the goal of intersectoral income redistribution is questionable. In this paradigm, only safety nets for the “really poor” are acceptable. Related to this clash of paradigms is the fact that stakeholders, and even researchers, have rather different, and often opposing, views about essential facts, causal mechanisms and appropriate policy solutions regarding the electricity supply to agriculture. The study finds that both paradigms are represented across almost all the stakeholder groups, including organizations representing the agricultural sector, the energy sector, the research community, and the political parties. Coalitions of political actors that promote certain reform options have, so far, been formed among groups that basically share the same paradigm, but not across paradigms.

Policy reform options and their political feasibility

Fertilizer

Past experiences with attempts at reforming the fertilizer policy and pricing framework suggest the need to look at alternative reform options and to evaluate their political feasibility, their fiscal, distributional and environmental impact. The report classifies reform options into three groups: (1) reform options that do not face major political challenges nor strong budget constraints; (2) reform options that do not face

major political challenges, but are confronted with budget constraints; and (3) policy options that are confronted with major political challenges.

Reform options that do not face either political resistance or strong budget constraints include achieving increases in efficiency through better application of knowledge and technology. Another reform option that fits this category but faces international market constraints is the relocation of the Indian fertilizer manufacturing to areas outside India that are close to the source of natural gas. This would allow the government to reduce its expenditure on subsidy and to maintain self-sufficiency in the production of urea. However, efforts in this direction are likely to be less successful if the international market price of natural gas remains high.

A reform option that does not face political resistance but does face budget constraints is the continuation of the group-wise concession scheme that exists today. Under this option, the savings in subsidy will be marginal. Moreover, this option does not correct the distributional problem and the nutrient imbalances.

Reform options that face strong political resistance include complete or partial decontrol of the fertilizer industry, import liberalization, increases in farmgate price of urea and even attempts at targeted price increases. Each of these options presents the possibility of positively addressing the fiscal, distributional and environmental concerns but each has been suggested before and has faced strong resistance from several political actors.

Electricity supply to agriculture

Based on the lacking success of past reform efforts, the study also emphasizes the need to consider a variety of reform options regarding electricity supply to agriculture, and to evaluate those options against multiple criteria. The study classifies reform options according to their ability to address three sets of problems: (a) the fiscal and distributional problems related to the electricity subsidies to agriculture; (b) the problem of the low quality of electricity supply to agriculture; and (c) the problem of groundwater depletion. The study illustrates how alternative options to reach the same goal(s) could be evaluated against multiple criteria. The emphasis of the study, however, is placed on assessing one criterion in more detail: the political feasibility of different reform options. Similar to the case of fertilizer policy outlined above, the study classifies reform options into three groups: (1) Reform options that are not confronted with either major political challenges or budget constraints; (2) reform options that are not confronted with major political challenges, but face possible budget constraints; and (3) policy options that are confronted with major political

challenges. The following list covers the range of policy options that were identified address the three sets of problems indicated above.

(1) Policy options that are neither confronted with major political challenges nor budget constraints: There is a range of policy options that are community-oriented, which can be expected to have a high political feasibility, as they are acceptable within both the welfare state-oriented and the market-oriented paradigm. These options include decentralization and devolution of both groundwater management and electricity supply, monitoring of electricity quality by citizen groups, and the promotion of independent farmers' cooperatives for the marketing of less water-intensive crops.

(2) Reform options that are not confronted with major political resistance, but face possible budget constraints include the following: Expansion of the High Voltage Distribution System to reduce to improve the quality of electricity supply and reduce power theft; expanding and improving surface water irrigation; intensifying research and extension on water-saving production techniques and less water-intensive crops; improving the marketing of less water-intensive crops; regulation of new bore wells; and promotion of energy-saving technologies. While the incentives to promote water-saving technologies are obviously higher if metering is introduced and the electricity price is increased, one needs to take into account that there are other incentives that also support water-saving technologies: (a) Even where electricity is free, water does have a price for the considerable share of the farm households that sell or buy water. (b) Increasing groundwater depletion imposes costs on the farmers (for deeper bore wells). (c) Some water-saving technologies, such as the System of Rice Intensification, have other potential benefits, such as yield increase.

(3) Reform options that are confronted with major political challenges include, not surprisingly, the ones that have been tried without major success for the last decade: Increase of the electricity price paid by farmers in combination with the introduction of metering; and the privatization of the power sector. Note that the introduction of metering is not affected by a clash between the welfare state-oriented and the market-oriented paradigm, but the other two options are. Targeting of subsidies provides an avenue to overcome this clash, but concerns regarding the feasibility of targeting need to be overcome.

Overall, the study acknowledges that current political feasibility is only one of the different criteria to be considered in selecting reform options for fertilizer and electricity policy. Therefore, the study proceeds to discuss policy processes and political strategies that may reduce political resistance against those policy options that

are at present characterized by low political feasibility, but may score high according to other criteria.

Policy processes and political strategies

The study assesses the following processes and strategies, which may be applied in combination. Value judgments may play a role in the choice of strategy.

(1) *“Stealthy gradualism:”* The strategy of gradually introducing reform elements “below the radar screen of public attention” played an important role in the early phases of economic reforms in India. However, this strategy it is less suited for the reforming the pricing framework related to nitrogenous fertilizers or for reforming the electricity supply to agriculture. However, this approach may be important for certain reform elements, such as the transition from free electricity to targeted subsidies. One area in which this type of strategy is being applied is in the pricing of natural gas – the administrative price mechanism (APM) is gradually being replaced by market-determined prices due to depletion of gas reserves earmarked for APM.

(2) *Strong political leadership:* Based on the experience of reforms in Andhra Pradesh, the study finds that political leadership may well play an important role in reforming the electricity supply to agriculture. However, the need to have an “ear on the ground” is particularly important, if this strategy is pursued. In the case of fertilizers, the study suggests that strong support from the political leadership would be important to translate the focus of the Ministry of Finance on rationalization of subsidies, especially in order to override opposition from the other ministries involved.

(3) *Packaging, timing and sequencing:* Packaging “unpopular” reform elements with popular measures as well as timing and sequencing could play an important role in reforming the fertilizer and the electricity supply to agriculture. In case of reforms affecting fertilizer producers, there are, however, no obvious options for “packaging” that can mitigate the negative perception attached to these reforms. In case of farmgate pricing of fertilizers as well as electricity pricing for agriculture, the government could reverse the declining trend in public investment in agriculture by channeling savings on the subsidy bill into such investments. The challenge of this approach is the time lag by which investments lead to higher farm incomes. In view of budget constraints, the options for packaging price increases with measures that have an immediate income effect are limited. Likewise, budget constraints limit the possibilities to sequence reforms in such a way that price increases are only implemented after other reforms did increase farm household incomes. Still, to the extent that fertilizer and electricity subsidies are used as a policy instruments for intersectoral income

redistribution between the agricultural and the non-agricultural sector, the challenge of packaging and sequencing policy reform is to identify more efficient policy instruments to reach that goal, which can be implemented taking bureaucratic challenges into account. Regarding the timing of reforms, it will be useful to conduct more research about “windows of opportunity” for policy reform. In particular, it would be useful to study how agricultural policy reform succeeded in other developing countries that are also democracies in which farmers have political voice.

(4) *Building new coalitions*: The failure to build new coalitions, for example coalitions that include environmental groups, in support of policy reform is an important factor in explaining the lack of success in past reform efforts. Research could play an important role in providing more transparency and making potential coalition partners aware of the way in which they are affected by the current situation and how they would be affected by a proposed policy change, for example, a move towards targeted subsidies.

(5) *Strategic bargaining and deliberation*: Strategic bargaining is an approach that assumes that people have fixed preferences and act only self-interestedly when they are in a bargaining situation. In contrast, deliberation—or approaches characterized as “deliberative democracy”—assume that social learning can occur and that people may change their preferences as a consequence of engaging in deliberative processes. Both approaches can play an important role in making policy reform possible. Strategic bargaining between labor unions, electricity utilities and the government, for example, has played an important role in making the power sector reforms in Andhra Pradesh possible. Strategic bargaining is likely to play an important role in the government’s negotiations with the fertilizer producing firms. Experimentation with deliberative approaches, such as Citizen Juries or Consensus Conferences, appears to be a promising avenue to involve a wider range of stakeholders, including different groups of farmers, rural laborers, utility personnel and environmental groups.

Use of research-based knowledge in promoting policy change

Research-based knowledge can play an important role in making policy reform possible by promoting policy-oriented learning across groups with different value- and belief systems or paradigms. However, to use this potential, it is important to understand the challenges of this strategy: (1) Since the level of conflict is high regarding both fertilizer policy and electricity supply to agriculture, stakeholders tend to use research-based knowledge strategically to promote their own position. (2) The analytical tractability of some of the problems related to both issue areas is complex,

since causal relationships span different policy areas. (3) While there is a range of “analytical fora” (such as commissions, journals, conferences) for professional debates in India, there are few fora where professionals with different value- and belief systems or paradigms engage in analytical debates.

Against this background, the following strategies appear promising:

(1) *Establish a “clearing house”* (e.g., in form of a website), where studies conducted in different states and by different institutions related to electricity supply to agriculture and groundwater extraction can be accessed more easily; there is a need for a similar repository for the various reports and studies on fertilizer policy and pricing frameworks as well as more general reports and studies on the problems of Indian agriculture and those on the need for reorientation of policy for preserving food security.

(2) *Focus new research more specifically on contested issues for which empirical analysis is lacking:* For example, it would be useful to have studies that examine the impact of small rises in the price of fertilizers on farmers’ income and food prices. With regard to electricity, there is substantial research on the direct distributional effects of electricity subsidies, but little empirical evidence regarding the indirect effects on farm households that purchase water, on agricultural laborers, or on food prices. Likewise, there is a range of analytical techniques that could be used to better understand the relationship between electricity pricing and groundwater use, such as stochastic frontier production functions to compare water use efficiency of households with metered and unmetered electricity supply, and use of linear programming models to simulate crop choices under different electricity price scenarios. Moreover, it would be useful to make research in this field more demand-driven, for example by linking it to deliberative processes (see above).

(4) *Promote analytical debate in more diverse “analytical fora”.* To promote policy-learning, it would be useful to create more opportunities, such as workshops or committees, where researchers and professionals with different value- and belief systems meet and engage in analytical debates.

Conclusion

In conclusion, the study shows that there is a variety of reform options to address the problems related to the electricity supply for groundwater use in India, which are not expected to be confronted with major political challenges. In particular, community-oriented approaches are promising in terms of political feasibility. For fertilizer policy

and pricing reform, reforms that do not face political resistance but offer fiscally rational outcomes include better use of knowledge and technology. Moreover, there is a range of policy processes and political strategies that could be tried to overcome political challenges. Models of deliberative democracy may have a considerable potential that has not been explored yet. Finally, research-based knowledge could be used more effectively to promote policy-oriented learning across groups that differ in their views and beliefs regarding the role that the state and the market should play regarding fertilizer and electricity supply to agriculture in India.

Part I: Introduction, Conceptual Framework and Methods

1 Introduction

Food production and agricultural development have been two related core areas of concern for policymakers in India since Independence. Groundwater irrigation and application of fertilizers are both crucial for food production and agricultural development. Fertilizers constitute an important input for increasing agricultural productivity. According to several estimates, between 50-60 per cent of the increase in food grain production in India since the 1960s can be attributed to higher fertilizer use (Venugopal, 2004: 59-60). Groundwater irrigation also plays a crucial role in food production since between 55 and 60 percent of India's irrigated lands depend on groundwater (Shah et al., 2003). Since electricity is the major energy source for groundwater irrigation, the electricity supply to the agricultural sector has high economic and political relevance.

Faced with food shortages and foreign exchange shortages—and the associated political problems of importing food—in the 1960s, the Government of India put in place a set of policies aimed at making India self-sufficient in food grain production. Encouraging the production and consumption of fertilizer and the use of groundwater played an important role in this context. While the policy framework was successful and achieved the intended goal of enhanced food production and food security, subsidizing fertilizer and electricity—along with other policies put in place at the time of the Green Revolution—has become subject to increasing criticism during the past decade.

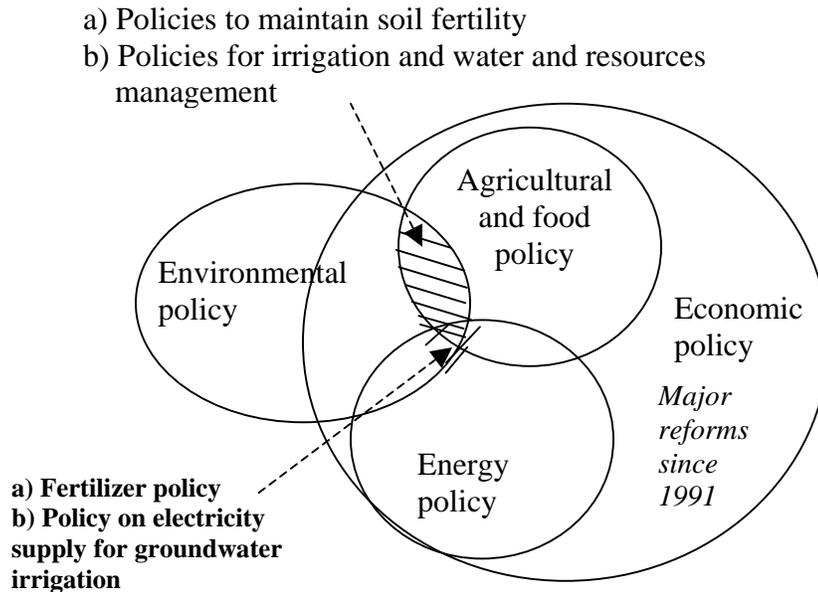
Since 1991, almost every Finance Minister has emphasized the need for reforming the government's 1970-era policies on fertilizers. Various government reports have recommended the same (High Powered Review Committee, 1998, Expenditure Reforms Commission, 2000, Planning Commission, 2002, Alagh Committee, 2005). The existing policy framework on production, distribution and sale of fertilizers has created severe fiscal burden for the central government. It has also contributed to severe imbalance in use of nutrients and to distributional problems across classes of farmers and across regions. Despite the Government of India's professed intentions of policy change and subsidy reduction, the expenditure on the fertilizer subsidy has increased from Rs 381 crore in 1980-81 to Rs 12,662 crore (budget estimate) in 2004-05 and is expected to go up to Rs 30,000 crore in 2006-07 (NIPFP 2004, Sood 2006). The subsidy on fertilizers, along with that on food and petroleum, now constitutes between 1.5-2% of India's GDP.

Electricity supply to agriculture has also been plagued for decades by a set of interrelated problems: unreliable and low-quality supply of electricity to farmers, electricity subsidies that lead to a considerable fiscal burden for the state while benefiting mostly the larger farmers, and a price structure that does not provide incentives to farmers to save groundwater and to manage groundwater and surface water jointly (Dubash, 2005; Rao, 2004; World Bank 2001(b), Dossani and Ranganathan, 2004; Shah et al., 2003; Batra and Singh, 2003; Monari Lucio, 2002). Various reform efforts during the last decade that aimed to reduce these problems were largely unsuccessful (Navroz and Sudhir, 2002; Brewer and Raju, 1995; Rao and Gulati, 1997; Peter 2002).

Reducing agricultural subsidies poses significant political challenges in almost all countries in which such subsidies exist. In industrialized countries, these subsidies are promoted by small but powerful farm lobbies that make it politically difficult for political leaders to change policies regarding subsidies and trade liberalization (Davis, 2003, Gawande, 2005). In the Indian case, the policy framework referred to above has created multiple interests that support the status quo. These include not only the farmers, who—unlike in industrialized countries—constitute a considerable share of the electorate, but also industries that produce fertilizers, people who benefit from power theft that is wrongly attributed to the agricultural sector, and others. Besides these actors, the government itself has multiple and often conflicting interests in the debate on subsidies. Fertilizer policy reform must be seen within the context of the government's overall efforts at economic reforms as well as within the context of fiscal discipline, food policy reform, reforms in the agriculture sector and the energy sector.

Figure 1 shows the interplay of these policy areas.

Figure 1: Policy fields related to fertilizer and electricity supply to agriculture



Source: Authors

The problem of electricity supply to agriculture is also complex, as it cuts across similar policy fields: Energy policy, agricultural policy, irrigation and water resources policy and environmental policy. All these policy fields are subject to major reform efforts, which have to be seen in the broader context of India's economic reforms, which started in 1991, and in the context of a growing concern for environmental sustainability.

The policies governing fertilizer and electricity supply to agriculture are different in one important way: While the federal government is responsible for fertilizer policy, federal and state governments are jointly responsible for electricity policy. Hence, in order to analyze past experiences with electricity policy reform, this report takes the two states as examples: Punjab and Andhra Pradesh. In both states, electricity supply to groundwater is important, but the states differ considerably in their approach towards reforms.

The study has three major objectives:

- (a) to analyze why past efforts to reform the policies governing fertilizer supply and electricity supply to agriculture had limited success in resolving the economic, distributional and environmental problems associated with these policies;

- (b) to identify reform options that have the potential to overcome these problems and to assess their political feasibility, and
- (c) to identify political processes and strategies by which reforms can be achieved.

The problems associated with fertilizer supply and electricity supply to agriculture have been subject to a number of studies. Regarding fertilizer supply, several economic studies suggest using an interest group approach (Kumar, 1999; Gulati and Narayanan, 2003; NIPFP, 2004) while others point to statist explanations (Sen and Venkateshwarlu, 2002). Several studies also suggest the role of coalition politics in the failure of reform in this issue area (Bardhan, 2003; Singh, 2004; Jenkins, 2005; Guha Thakurta and Raghuraman, 2004). The problems regarding the electricity supply to agriculture in India have been analyzed even more extensively both in the literature on power sector reforms and in the literature on irrigation reforms or, more generally, agricultural sector reform. An increasing number of studies also deal specifically with the “energy-irrigation nexus” (see Chapter 2 for references).

The present study departs from the existing literature in several regards: First, the study takes into account that politics is driven by interests, institutions and ideas. Hence, in addition to analyzing interests and electoral politics, the study examines the role that knowledge, beliefs and worldviews play in shaping the politics on fertilizer supply and electricity supply to agriculture. The study also systematically examines the role of institutional factors such as inter-bureaucratic and coalition politics. Second, the study examines the policy reform both at the national and state level based on interviews with representatives of interest groups and key informants. 35 interviews were conducted for the study of fertilizer supply, and 75 interviews for the study on electricity supply. Third, rather than concentrating on the “first-best option” of increasing the fertilizer price and the electricity price paid by farmers, the study evaluates the political feasibility of a range of alternative and complementary policy options to meet equity, efficiency and sustainability goals, including options that are considered “second-best” from the perspective of neo-classical economics. Fourth, the study discusses a range of policy processes by which reforms may be achieved in spite of political resistance. Fifth, the study pays particular attention to the role that research-based knowledge can play in promoting policy reform.

Using this approach, the study is able to identify factors that have received limited attention in the literature so far, most notably (i) the fundamental disagreements of different stakeholders regarding basic facts, causal mechanisms, and appropriate reform options (ii) the role of different political paradigms in the political debate, (iii)

the resulting obstacles to the formation interest coalitions across policy fields in favor of a reform, (iv) the role of bureaucratic politics in case of fertilizer supply, and (v) the dynamics of state-level party politics in case of electricity supply to agriculture.

The paper is organized as follows: Chapter 2 reviews the relevant literature. Chapter 3 presents the conceptual framework and the methodology. Chapters 4-7 deal with fertilizer policy. Chapter 4 describes the evolution of the fertilizer policy and the actions taken thus far by the Government of India (GOI) to reduce and/or rationalize the subsidy on fertilizers. Chapter 5 analyses of the politics of farmgate pricing and Chapter 6 deals with reforming the policy framework that governs the production and distribution of nitrogenous fertilizers. Chapter 7 discusses policy options Chapters 8-11 deal with electricity supply to agriculture. Chapter 8 provides background information on electricity supply to agriculture in Andhra Pradesh and Punjab within the all-India context. Chapter 9 describes the evolution of the policies governing electricity supply to agriculture in the two states, and the Chapter 10 analyzes the political economy of these policies. Chapter 11 assesses a range of policy options. Chapter 12 discusses political strategies for policy reform regarding both fertilizer and electricity policy, and Chapter 13 concludes.

2 Insights from the Literature

Considering the cross-cutting nature of the policies governing fertilizer and electricity supply to agriculture (see Figure 1), the topics have also been addressed from the perspective of different sector policies and by scholars of different disciplines. While a comprehensive review of the literature in all related policy fields displayed in Figure 1 is beyond the scope of this paper, this section reviews selected key sources from the different policy fields that are of particular relevance for the present study.

2.1 Political Economy of the Economic Reforms

2.1.1 Overview

Economists, political scientists, sociologists and anthropologists have contributed to a sizable body of literature on the politics of economic reforms in India (Bardhan, 1999, 2001, 2003, Jenkins, 1999, Varshney, 1999, Corbridge and Harris, 2000, Mooij 2005). Liberal economic reforms were initiated by Prime Minister Narasimha Rao in India in 1991. After the initial announcements in 1991, the Rao government and subsequent governments have all supported the overall rhetoric of liberalization but have showed varied success in moving the process along. It is recognized that industrial reforms,

financial sector reforms and other service sector reforms have dominated the reform agenda while agricultural reforms have not received as much attention from policymakers (Bardhan, 2003, Rao, 2004). The literature cited above addresses two important questions:

- (1) What are the implications of the reforms in terms of poverty reduction? and
- (2) Why were the reforms politically feasible at all, and why did they progress faster in some policy fields than in others?

Regarding the first question, one can observe a deep divide between pro-reform economists on the one hand, who emphasize the positive effects—especially the growth effects—of the reforms, and the reform critics on the other hand, who question the distributional implications of the reforms. As Bardhan (2005) notes:

“Each side describes the other in stereotypes and usually talks past each other. The pro-reformers identify the opposition as belonging to the ‘loony left’, caught in a time warp, oblivious of global changes and elementary economics. The other side paints the reform-mongers as ‘neo-liberal’ (a widely used term of abuse in certain circles) and lackeys of global capitalism oblivious of the poor and the dispossessed.”

As Deaton and Kozel (2005) show in their paper on “Data and Dogma”, controversies about poverty measurement and statistics have gained a prominent place in the debate about the effects of the economic reforms. Popular opinion seems to support the view that the economic reforms were not pro-poor. As a national election survey held in 2004 reveals, three-fourths of respondents who had an opinion on the subject agreed with the statement that the reforms “benefit only the rich” (Suri, 2004). What is of particular importance with regard to the topic of this paper is the widespread perception that the economic reforms did not benefit the majority of the *rural* population. This factor is widely considered as crucial for the change of government in the 2004 elections. This divide in perception shapes the debate on agricultural policy reforms and therefore, the policy process itself.

Regarding the second question, the literature has identified on a wide range of factors. Based on a framework that is widely used in comparative politics to study the political economy of reforms in developing countries (Nelson, 1989, Haggard and Kaufman, 1992, Bates and Krueger, 1993, Williamson, 1993, Haggard and Webb, 1994), we classify these factors into three categories: interests, institutions and ideas.

2.1.2 Role of interest politics

A substantial portion of the literature on the political economy of economic reforms is devoted to understanding economic reforms or the lack of it through the analytical lens

of interests. Simply put, this strand of the literature argues that economic reforms have not taken place because groups whose interests are threatened by such reforms, have fought to keep these changes at bay. A dominant political explanation of India's economic realm comes in the form of the dominant proprietary class thesis which argues that Indian economic policies are best explained by looking at the interests of the dominant proprietary classes, i.e., business, large farmers and the professional classes (Bardhan, 1998). Thus any policy change that threatens the interests of one of those classes is likely to fail.

In his more recent writing, Bardhan recognizes that the attitudes of the proprietary classes towards economic policies has changed and that such change has offered windows of reforms on occasion. However, while explaining the relative lack of reforms in agriculture he argues that most farm sector interest groups "are not very active in demanding reforms of agricultural controls," perhaps because they think that "the dismantling of the existing structure of food, fertilizer, water and electricity subsidies in exchange of receiving, say, international agricultural prices may be too complex and politically risky a deal." (Bardhan, 2003: 282) The dominance of specific interests also means that economic policy changes can take place successfully only where the government engages in "reform by stealth" (Jenkins, 1999) or where specific reforms aim at changing policy that affect the elite and not the masses (Varshney, 1999). Varshney's contention is confirmed by Pedersen (2000) who emphasized the emergence of a new group of reform-minded industrialists, represented by the Confederation of Indian Industry (CII), as an important factor in sustaining the momentum of the reform process during the 1990s. The reforms they supported took place in the arena of what Varshney calls "elite politics".

This would lead us to conclude, as Bardhan does, that in issue areas where a constellation of interest groups remains powerful, economic reforms will not take place (Bardhan, 2003). Jenkins' argument is supported by evidence that public awareness about the economic reform process was in fact rather low during the 1990s (Kumar, 2004). However, in a recent contribution, Jenkins (2004) has argued that the "reform by stealth" approach he observed in the 1990s had become insufficient to promote India's second-generation reform agenda. He identifies the need to address different ideologies as the major challenge for future reforms.

While intuitively the interest-based argument is convincing, in practice, it is often difficult to attribute the lack of reform to the machinations of particular interest groups since empirical evidence needed to arrive at such a conclusion is hard to come by. The scholar then is left with anecdotal evidence at best and conjectures at worst. More importantly, however, the analysis is, as this study will demonstrate, further

complicated by the lack of differentiation in the position espoused by a major interest group and a government department. For example, it is relatively easy to find evidence for the fertilizer industry's opposition to proposed reforms in the past. However, the argument that this opposition was crucial to the failure of reforms is convincing where it can be shown that the government was united and strongly in favor of policy change.

2.1.3 Role of institutions

A second subset of the literature focuses on the institutional bases of reform. Some scholars debate whether the Indian state is rent-seeking or developmental, i.e., what role its bureaucrats and policy-elite play in ensuring continuity and in bringing about necessary change to the economic framework. The neoclassical rent-seeking argument categorizes the Indian state as a rent-seeker. In this formulation, state officials pursue their interest in maximizing their income and a closed economy with its various controls on business and commerce offers the perfect opportunity for these officials to seek rent (Bhagwati, 1993). Others differ in arguing that while the Indian state engages in rent-seeking activities, it also demonstrates developmental traits (Mooij, 1999). The state-as-a-rent-seeker argument leads us to expect that the state would have absolutely no interest in changing a policy framework, such as the one governing production of fertilizers that obviously offers a wealth of rent-seeking opportunities. The Department of Fertilizers within the Ministry of Chemicals and Fertilizers exists for the sole purpose of taking care of the interests of the fertilizer firms and therefore, it would seem logical for them to oppose dismantling the framework that gives the department its *raison d'être*, its source of power and its opportunities for rent-seeking. However, the department is one of many within the Indian government and has to engage with other players in the reform process. Other ministries, such as the Ministry of Finance, may demonstrate the developmental side of the Indian state in the debate on fertilizer policy. However, neither of these formulations is able to give us a clear answer as to why policy change does not take place in certain issue areas. A tendency to treat the state as a unitary player is perhaps partly to blame. Neoclassical economists argue that the state has its own interest. Here, we argue that the state has multiple 'interests'. Each department/ministry has its specific objective and faced with reform, each negotiates towards a position that would protect its core interest (Varshney, 1998: 58-60). In this latter formulation, the state often demonstrates a rather schizophrenic character, with its different departments pushing for conflicting and often opposing goals that lead to stalemates.

Another institutional variable to which scholars rightly turn their focus is the legislature (Nelson, 1989, Haggard and Kaufman, 1992, Haggard and Webb, 1994).

Cross-national studies have shown that legislative majority is associated with successful initiation and implementation of economic reforms and minority or coalition governments are seen as less likely candidates for such success. However, the Indian case suggests that we look beyond legislative majorities and coalition governments, and pay attention to institutional design and the extent of the legislature's role in economic policymaking. In short, we ask, following Tsebelis (2002), on whom Indian political institutions confer veto power. In India, the parliament plays a role in economic policy making in two ways. First, a majority is required to pass the budget every year and if a government fails to get the budget endorsed, its survival is jeopardized. If a reform measure is embedded within the budget, then it requires legislative approval. However, for a host of economic policies, the government can initiate changes through executive decisions without seeking legislative approval. Such policy change is primarily an outcome of negotiations among cabinet members and existing rules governing the work and jurisdiction of specific ministries. In such cases, it is coalition politics that influences the outcome of the negotiations among cabinet members, where the coalition managers, particularly the Prime Minister and other leaders of the majority party, must pay attention to specific interests of smaller coalition partners, whose cooperation is crucial to the coalition's survival and success.

The parliament plays a role, albeit indirect, in this second set of policies also – it serves as the bell-weather for Indian politics in that legislators use it to articulate their positions and thus indicate the spectrum of acceptable policy options. It tells us where in that political spectrum, a consensus can be arrived at and what could face an indirect veto.

Public expenditure is one area in which outcomes seem to be shaped by coalition politics (Bardhan, 2003, Jenkins, 2005). In his argument, Jenkins gives consideration to external factors such as commitments to international financial institutions that have put pressure to reduce the fiscal deficit as well as to pressures from coalition partners, which he argues were so strong that the external constraints were more than negated. While it is highly plausible that coalition politics may have played a major role in the ballooning of the fiscal deficits, that hypothesis, like most others, has not been examined in the context of sector-specific policy reforms in India. It may be argued that politics in India has always been some form of coalition politics whether under the Congress as an umbrella party in the earlier decades or under the more formal coalition model of the 1990s. Scholars have not explicitly examined whether veto power wielded by coalition partners constrained economic reforms. Since most of the

coalition partners are also regional parties, regional pressures and coalition pressures often overlap (Bardhan, 2003, Jenkins, 2005).

The impact of the regionalization on economic policy making and policy reform is felt through multiple channels as well. Regional parties can play a role in economic reform either by supporting or vetoing reform proposals as part of a national coalition or they may do so because the constitution or other institutional arrangement mandate state government approval in changing certain policies. The latter point is significant in the area of agricultural policy since agriculture is a state subject and therefore states can be expected to play a larger role in policymaking in issue areas related to agriculture. While scholars have examined the differential impact of reforms across states due to the differences in implementation of reforms (Saez, 2002, Kennedy, 2004, Sinha, 2004), much less is known about the dynamics of state-level politics and its impact on economic policy making and policy change at the center and in states.

2.1.4 Role of ideas

Cross-national comparative studies of political reforms have also focused on the role of ideas in economic liberalization (Kahler, 1992, Stallings, 1992). The literature pays particular attention to the renewed focus on neoliberalism in the west (specially in the United States and Britain) in the 1980s, the ideas that are embodied in the so-called Washington Consensus, and the influence of these ideas in the reform processes in countries ranging from Chile to Indonesia. These ideas are disseminated by institutions such as the United States government, the International Monetary Fund and the World Bank through their writings, negotiations and recommendations. In addition, the transmission of these ideas is made possible by closely involving western-educated economists and technocrats in the reform process. These are individuals who are citizens of the reforming country but may have imbibed neoliberal economic ideas during their graduate studies in American institutions or during stints of employment at international financial institutions. Cross-national studies of reforms found that most of the successful reform episodes were aided by the presence of such reform-minded leaders and change teams (Haggard and Williamson, 1993, Haggard and Webb, 1994). Shastri (2001) has argued that such a reform-minded change team also aided the initiation of liberal reforms in India in 1991. However, neither the 1991 change team nor the several liberal finance ministers that succeeded thereafter were able to bring about necessary change in the policy framework governing the production and distribution of nitrogenous fertilizers in India despite several high-level committees recommending such policy change (HPRC, 1998, ERC, 2000). Dubash and Rajan (2002) point to role of changing ideas away from ideas of social

democratic governance to market liberalism, motivated by the unraveling of the Soviet Union.

While an overall consensus on liberalization dominated the discourse on economic policy in India in the post-1991 period, protectionist ideas from the pre-reform period have by no means been eliminated. Bardhan (2001: 226) points to a “dominant anti-market streak in the collective passion for group equity... among the common people in India” and argues that government subsidies are justified in the name of inter-group equity and that this ideological element stands in the way of economic reforms in India. In a recent article, Jenkins points out that there are three power political formations—lower-caste assertiveness, Hindu nationalism, and issue-based social activism—which all “share a partial claim to the most potent anti-market ideological tradition in India over the past century: swadeshi, a multifaceted Indian variety of economic nationalism.” (Jenkins, 2004: 2). These observations also make it clear that there are two distinct discourses on the issue of economic reforms in India and that there is a need to take ideology, or belief systems, and discourse into account, when analyzing India’s economic reforms. While this shows that ideas matter, we still need to understand the specific mechanism through which ideas aid or hinder the success of policy change.

One framework for understanding the process of policy change and of understanding the role of policy-oriented learning within that process is provided by Jenkins-Smith and Sabatier in their network advocacy approach (1993). They suggest that policies are shaped by both ideas and interests. Advocacy coalitions may consist of government bureaucracies, interest groups, legislators, researchers and non-governmental organizations – in short any stakeholder in a policy process. Sabatier (1993) argues that policy change takes place by altering the perceptions and conceptual apparatus of policymakers over time. Thus at any given point in time, policy reform can be shaped by the existing policy-oriented knowledge and the nature of the coalition advocating that alternative policy paradigms.

2.1.5 Role of international pressure

Finally, a fourth subset of the literature seeks to examine the impact of international factors such as international markets and institutions on liberal economic reforms in developing countries (Kahler, 1992, Stallings, 1992). Higher global market prices for commodities can build pressures to liberalize. International financial institutions may impose change from outside through built-in conditionalities attached to structural adjustment loans. Several Indian scholars have argued that the liberalization program adopted by the Indian government is imposed from above by the likes of IMF and

World Bank and have been implemented by a small group of policy elite familiar with and in agreement with those financial institutions' neoliberal policies (Shastri, 2001, Bhaduri and Nayyar, 1996, Patnaik, 2000). However, while international financial institutions often suggest reforms, their ability to impose them is restricted to times of economic crisis. At other times, a sovereign government usually has substantial autonomy to resist such pressures if it wants to. Jenkins (2005) argues that international pressures were superseded by other considerations while tackling fiscal deficits during the NDA rule.

While the above discussion points to several hypotheses that could contribute to explaining lack of adequate reforms in fertilizer and electricity policy, it also highlights the relative lack of empirical sector-specific work on economic policy reforms in India. Therefore, a study of the political forces that have shaped fertilizer policy and electricity policy in India should examine several of the possible hypotheses discussed above. As Mooij (2005) points out, "the dust has far from settled in the debate on the politics of the reforms in India."

2.2 Political Economy of Agricultural Policy Reforms

Agriculture is a state subject in India's federal system. Reforms in the agricultural sector can be classified into five fields, all of which have been addressed in various sector-wide and sub-sector policy and planning documents in India: (1) deregulation of markets; (2) reform of commodity price policy; (3) rationalization of input subsidies; (4) increase of productivity enhancing investments; and (5) reform of institutions (c.f. World Bank, 2004c). Reform achievements include the abolition of restrictions on movement of commodities, the liberalization of agricultural trade and exports, and the introduction of targeting in the public food distribution system (PDS). In other fields of agricultural policy, reforms have not progressed very far. Subsidies on fertilizer, food, irrigation and power—the latter of which are subject of this study—continue to exist. Likewise, basic stable prices remain controlled by minimum support prices (see overview by Mooij, 2005: 21).

To explain the mixed progress in agricultural policy reform from a political economy perspective, the lines of argumentation discussed above for general economic reforms and electricity sector reforms can be applied, as well. In line with Jenkins' (1999) "stealthy gradualism" argument, one can hold that reforms with obvious direct effects on a large share of the agricultural population, such as reduction of input subsidies, proved to be more difficult to implement than policies with largely indirect effects. Considering that agriculture employs 60% of India's labor force, Varshney's (1999)

“mass” versus “elite politics” argument can also help to understand why economic reforms were more far-reaching in industrial and trade policy than in agricultural policy.

Still, to understand the political economy of agricultural policy reform, it is necessary to take a longer time horizon into account and consider a wider variety of explanatory factors. The policies that were essential to foster the Green Revolution, such as input subsidies, commodity price policies and market regulations, have created their own path-dependent dynamics. These policies contributed to the emergence of diverse farmers’ movements, which influence agricultural politics in different ways, subject to a variety of state-specific factors, such as agrarian structure and party politics. Moreover, discourse is an important factor in influencing agricultural policy, as the discourse about the “agrarian crisis” and farmers’ suicides indicates. As the subsequent chapters will show, the efforts to reform electricity subsidies to agriculture are in fact a prime example of the complexity of agricultural policy reform in India.

The available literature on agricultural policy reform in India has a strong focus on the technical and economic dimensions of different reform areas, such as input subsidies (Gulati and Narayanan, 2003), trade (Storm, 1997) and irrigation (Gulati et al., 2005). The debates in this field resemble the debates on general economic reforms quoted above. Contested issues include the question as to whether liberalization and withdrawal of subsidies will ultimately benefit the poor, and whether the targeting of subsidies is desirable and feasible. In the field of irrigation and water resources policy, the debate has focused on the use of market-based instruments (such as water pricing and trading) versus regulatory instruments, and on the devolution of management authority to local governments and water user associations. In the field of fertilizer policy, the debate has focused on the need for self-sufficiency in fertilizer production, the mechanism for disbursing subsidies to farmers and the options for increasing efficiency of domestic industry. There is also a range of studies related to the political economy of agricultural policy reform in different fields. The analytical approaches applied range from sociological concepts of agrarian class relations (e.g., SinghaRoy, 2005) to neo-classical public choice approaches (see, e.g., Abler and Sukhatme, 1998).

2.3 The Political Economy of Policy Change in Fertilizer Pricing and Subsidy

The politics of fertilizer subsidies in India has received relatively little scholarly attention. Economic analysis of the fertilizer subsidy and farmgate pricing of fertilizers suggest several hypotheses as to why reforms have not taken place. Various studies have analyzed the economic impact of subsidies and identified the real

beneficiaries of subsidies (Gulati and Narayanan, 2003, NIPFP, 2004). Since fertilizer manufacturers and large farmers are the likely beneficiaries of the existing policy framework, these studies would suggest that the stalemate in policymaking in this issue area is a result of opposition from these interest groups. Kumar (1999) notes the opposition of the fertilizer industry to proposed reforms. Sen and Venkateshwarlu (2002), however, place less emphasis on interest politics by arguing that the fertilizer industry has been shaped by government policy in the past. Their argument seems to suggest that uncertainties and inconsistencies associated with government action have shaped the policy process and the lack of progress. Singh (2004) examines the issues of inter-crop, inter-regional and inter-class equity in the distribution of fertilizer subsidy among farmers and identifies paddy and wheat cultivators and farmers in six states as major beneficiaries of the subsidy. This suggests that regional politics and therefore coalition politics should be a key factor in determining the success of reforms in this area. Similar suggestions are also made by Bardhan (2003), Jenkins (2005) and Guha Thakurta and Raghuraman (2004). However, the validity of none of these hypotheses has been empirically examined. In order to understand the real causes for a relative lack of reform in the fertilizer sector, we analyze the roles played by each of the likely explanatory variables identified by the literature review above.

2.4 Political Economy of Power Sector Reforms

Energy policy in India is the joint responsibility of the federal government and state governments. In view of the serious problems plaguing the sector, such as energy shortages, high levels of energy theft, and high financial losses, the energy sector was one of the first sectors identified for liberalization in the early 1990s. However, the energy sector reforms have to be seen in an international context, too. Around the world, conventional wisdom about the electricity sector—public ownership and integrated utilities—was challenged during the 1990s by a new model of private ownership and unbundled utilities (Dubash, 2002).

One of the most comprehensive reviews of the process of reform in India's power sector is the paper by Dubash and Rajan (2001). The authors distinguish four overlapping, but distinct phases of power sector policy: (1) pre-1991 policy, (2) the 1991 Independent Power Producer (IPP) policy and its aftermath, (3) the World Bank-led restructuring policy that began to be implemented around 1993 in Orissa, and (4) the period shortly after 1998, when the restructuring model was scaled up through national legislation and state-level reforms. Table A1 in the Annex 1 provides a chronology of electricity reforms in India.

Analyzing the pre-1991 period, Dubash and Rajan (2001) explain the origins of the electricity subsidy to agriculture in the late 1970s as caused by (a) the struggle of the Congress party against the emerging regional parties in Southern India, and (b) the agitation of farmers' organizations, especially in Tamil Nadu (see Chapter 5). The authors show that the abolition of metering and the extensive subsidy have come to be seen as an entitlement by farmers since then, resulting in a major institutional "lock-in" situation, which makes reform efforts difficult. This view is widely shared in the literature on power sector reform. Another major lock-in, according to Dubash and Rajan (2001) was the signing of IPP contracts, which had major fiscal implications but rather mixed outcomes. In their analysis of the political process, the authors highlight the role of the World Bank as playing "a central role in moving the sector to the threshold of a new organizational form" (Dubash and Rajan, 2001: 3385). The authors also acknowledge that a larger number of actors—apart from state governments and donor agencies—are now involved in the reform process.

Sudha Mahalingam, another prominent analyst of India's power sector reforms, distinguishes two reform phases in her analysis: (1) the introduction of IPPs, and (2) unbundling and privatization of SEBs and the introduction of independent regulatory commissions (Mahalingam, 2005). In line with Jenkins "stealth" argument quoted above, Mahalingam argues that during the first phase, far-reaching changes were introduced in a stealthy manner, creating considerable scope for corruption to those in charge of implementing the reform. The corruption potential of creating IPPs is, in fact, well documented (Mahalingam, 2005; Dubash and Rajan, 2001). According to Mahalingam, the second phase of the reform remained largely a non-starter, because stealth was not an option any longer, and the Phase II reforms imposed a cost on those implementing them by targeting corruption, rather creating scope for it.

In his book on "Privatizing Power Cuts", Joël Ruet (2005) argues that power sector reforms aiming at improving efficiency cannot succeed, if they are only based on monetary incentives. They have to be based on a radical transformation of the organizational nature of State Electricity Boards, which he calls "enterprisation." The latter is defined as the transformation of an administration into a full fledged enterprise, a point which, according to him, has not been reached through the current so-called structural reforms. Ruet (2005) takes the position that there is a misuse of traditional economic concepts and categories to analyze the State Electricity Boards, which has the dramatic consequences for the proposed reform agenda.

A number of authors have analyzed the Electricity Regulatory Commissions, which are envisaged to be independent authorities that provide transparency and ensure public participation (Rao, 2004). This is, however, not necessarily the case, as

Subramaniam and Vyasulu (1999) show for Karnataka, and Godbole (2000) and Dixit et al. (1998) for Orissa. India's power sector reform legislation explicitly provides the state and central governments with powers to override decisions of regulatory commissions.

One of the most comprehensive and recent analyses of the political factors affecting power sector reform in India is Sumir Lal's study "Can Good Economics Ever Be Good Politics"? (Lal, 2006). He focuses on the "rhetoric-implementation gap". His analysis starts from fact that, at the rhetorical level, power sector reform has been regularly endorsed by leading politicians from all political parties both at central and state level. Until recently, Lal (2006: 3-4) observes, "newly elected chief ministers who won elections on populist slogans have also taken up the reform mantra on assuming office, though this trend has apparently halted after the latest round of national and state elections in 2004."

Lal's major argument is that politicians speak simultaneously to two different audiences, which are almost completely disconnected: The first audience is the policy and financial elite, which comprises both a domestic metropolitan component and an urban and investor component. The second audience is the political constituency of the politician. Actions in respect to this audience are usually dismissed as "populist" by the first audience, even though they "comprise both legitimate attempts to address grassroots concerns, and distorted attempts to placate swing-voter categories such as big farmers." (Lal, 2006: 4). Lal argues that power sector reforms have been stalled because of both "legitimate populism" as well as "distorted populism." He identifies five factors that account for the rhetoric-implementation gap: (1) legitimate grassroots concerns about the impact and sequencing of the reform; (2) a credibility gap that leaves audiences, especially consumers, unconvinced of the necessity of the reform; (3) the need to placate certain voting blocs, especially large farmers; (4) obstruction by interest groups with a stake in the present system, such as staff members, suppliers and contractors who gain from corruption; and (5) an inert bureaucracy that is highly unionized, has a safety-first rather than a visionary culture, and is effective in safeguarding their interests.

Lal concludes that future reform efforts should try to move beyond the pattern of "stealthy gradualism" and to ensure "democratic ownership of the reform by negotiating its content with the beneficiary populations and mobilizing grassroots political reform champions" (Lal, 2006: 22). He emphasizes the need to address the political rather than only the technical dimension of power sector reform, and recommends to make major stakeholders, including entrenched interest groups, to "own the problem" first and then to negotiate solutions. Devolution of electricity

distribution to local communities or cooperatives is one such strategy. With a view to tackling corruption, Lal (2006: 12) makes the important point that election-funding reform is in many ways a prerequisite to successful power and governance reform in India.

2.5 The Energy-Irrigation Nexus: Political and Technical Aspects

Apart from being dealt with as an aspect of either energy policy or agricultural policy, electricity supply to agriculture has also become subject to a specific literature on the “energy-irrigation nexus.” (Shah et al., 2003). This literature focuses on the need to co-manage the energy sector and the groundwater sector as both sectors are obviously linked. The question of electricity pricing for irrigation assumes a prominent place in this literature. From the perspective of neo-classical economics, a metered tariff regime with volumetric pricing that reflects the real costs of electricity supply and creates incentives for the economic use of electricity in agriculture would be the preferred solution for both the energy and the groundwater sector. However, as Shah and his co-authors (2003) have prominently argued, political resistance and high transaction costs would make this solution infeasible. Shah and co-authors suggest a “rational flat rate” regime, which is characterized by the fine-tuning of a restricted power supply to the irrigation needs of the farmers. Critics of this approach point to the managerial challenges of this fine-tuning (Dubash, 2005). Moreover, in the absence of studies that attempt to empirically measure the transaction costs of different pricing regimes (which would be possible as there are metered pump-set connections in India), the question remains unresolved whether metering would be feasible, if, for example, embedded in a negotiated solution with farmers.

Detailed information on the economic dimension of the energy-irrigation nexus has been provided by the World Bank study “Power Supply to Agriculture” (2001b), which is based on farm-level surveys in Andhra Pradesh and Haryana. The study found that (a) power theft and losses were considerably higher than previously assumed, (b) the power subsidies mostly benefit larger farmers, (c) farmers incur considerable costs caused by the unreliable power supply resulting in damaged pumping equipment, irrigation foregone because of power losses, and distorted investment patterns, and (d) farmers, especially small and medium farmers, would in the medium-term benefit considerably from a reform that is partly financed by increased tariffs and improves the quality of electricity supply.

In his recent paper “The Electricity-Groundwater Conundrum – A Case for a Political Solution to a Political Problem”, Dubash (2005) has analyzed the political dimension of the energy-groundwater nexus. As he observes (Dubash, 2005: 1):

“Although the debate on the electricity-groundwater link is long-standing, it is marked by a focus on technocratic approaches to policy-making rather than an appreciation of the entrenched political nature of the problem. Fixes have tended to be economic—raise prices to farmers—and/or technological—install meters. Both are standard elements of the electricity reform prescription the nation has struggled, largely unsuccessfully, to implement over the last five to ten years. Failures to follow both prescriptions are ascribed to a lack of ‘political will.’ And there the matter rests. Until politicians develop political backbone, it is argued, there is little that can be done.”

Analyzing the political dimension of the electricity-groundwater link, Dubash (2005) finds that farmers have in fact good reasons to be concerned about their future under a reform that follows the standard prescriptions. He concludes that reforms will only be feasible and sustainable, if they are based on a political bargain, to which the various parties involved, especially the farmers, can agree.

Another nexus, which is related to the energy-groundwater nexus, has received rather limited attention in reform literature: the surface water-groundwater nexus. Groundwater irrigation and surface water irrigation are linked in a technical as well as in a political sense. Surface water irrigation constitutes an important source for groundwater recharge and in many regions of the world, groundwater irrigation takes place primarily in areas that are subject to surface water irrigation. However, in India, groundwater irrigation has been expanded to a considerable extent into areas that are not irrigated by surface water (IMWI-Tata, 2002). This contributes considerably to the problem of overexploitation of groundwater resources. In fact, groundwater and surface water irrigation are often seen as substitutes in India, rather than as complementary activities. As Reddy (2005) shows in a case study of Andhra Pradesh, the integration of groundwater development and exploitation with the management of surface water bodies like tanks would be an important strategy for sustainable water resources management. He also shows that overuse of groundwater without recharge affects small and marginal farmers disproportionately, as they are less able to afford deeper bore wells and stronger motors. Likewise, Dhawan (1995) shows that surface water provides a major source of groundwater recharge that and without canals or tanks, there will be less groundwater.

Apart from the hydrological linkages, groundwater, surface water and electricity are also linked in the policy debate. Defending electricity subsidies, groundwater users,

who have to make private investments in irrigation infrastructure, can always point to the users of surface water, who benefit from public investment in surface irrigation infrastructure. Hence, policy reform efforts in both fields are intrinsically linked.

3 Conceptual Framework and Research Methods

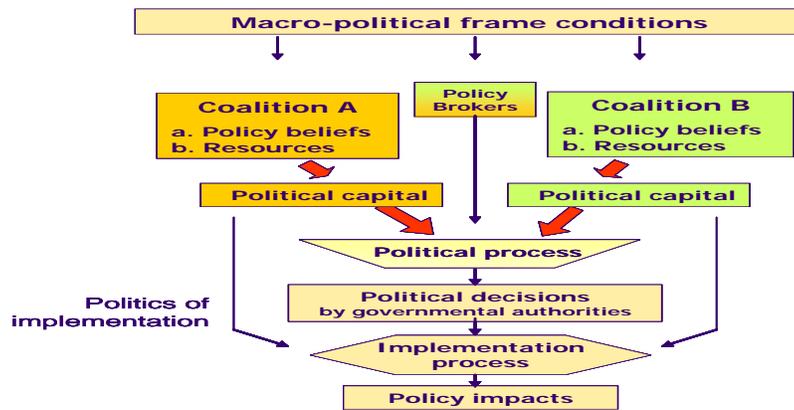
3.1 Conceptual Framework

3.1.1 Overview

As the literature review in the previous section shows, a variety of arguments has been applied to explain why efforts to reform the fertilizer supply and the electricity supply to agriculture have not been successful, in spite of the obvious need for reform. Yet major knowledge gaps remain, because different authors have focused on different explanatory factors, and because—in case of electricity—because the conditions vary considerably between states. Since most policy recommendations derived from the studies quoted above are generic, there is limited information on strategies for identifying the most relevant political obstacles to reform, and for devising specific reform strategies on this basis. To address this knowledge gap, the present study uses a conceptual framework, which makes it possible to consider a variety of influencing factors at the same time.

Figure 2 represents the conceptual framework adopted for the study. The framework is based on a combination of the Advocacy Coalition Framework developed by Sabatier and Jenkins-Smith (1993) with political resource theory, as developed by Ilchmann and Uphoff (1998). The combination of these approaches acknowledges that policies are driven by interests, institutions and ideas. To address issues of timing in political processes, the framework also draws on the policy windows approach developed by Kingdon (1984).

Figure 2: Conceptual Framework



Source: Adopted from Sabatier and Jenkins-Smith (1999: 121)

As indicated in Figure 2, political decisions in favor or against different reform aspects are the outcome of a political process, in which different coalitions of interest groups interact. Two types of coalitions are considered in this study: (1) Discourse coalitions (c.f. Hajer, 1995) and (2) advocacy coalitions (Sabatier and Jenkins-Smith, 1993; 1999).

3.1.2 Discourse coalitions and advocacy coalitions

Discourse coalitions are defined here as groups of actors that share a discourse on a policy issue, which is indicated by their usage of a particular set of story-lines. Based on their shared discourse, it is assumed that the groups constituting a discourse coalition also share a common underlying belief- and value system (van Dijk, 1998).¹ Discourse coalitions consist of groups that do not necessarily engage together in political action, but by sharing a discourse, they are able to shape the political debate and people's opinions.²

¹ In this paper, the term "value- and belief system" is used instead of ideology, the term used by van Dijk (1998) and other authors. The term "ideology" is avoided in this paper as it has a pejorative connotation in everyday language, implying a system of false or distorted beliefs, typically held by political or social opponents.

² Hajer (1996), who developed the concept of "discourse coalitions" as an analytical approach differs in his interpretation from van Dijk (1998). In Hajer's view, which is influenced by Foucault, discourse is not merely the expression of underlying ideas and interests. According to him, those "cannot be assumed as given, but that they are intersubjectively constituted through discourse" (Hajer, 1995:59). Though using the term "discourse coalitions", this paper follows van Dijk's (1998) approach.

2) *Advocacy coalitions* can be considered as a sub-set of discourse coalitions. They are characterized by the fact that the individuals and groups constituting the coalition engage in a nontrivial degree of coordinated activity over time do to advocate specific policy options. Following the Advocacy Coalition Framework (Sabatier and Jenkins-Smith, 1993, 1999), advocacy coalitions may include interest group leaders, agency officials, legislators from different levels of government, applied researchers and journalists.

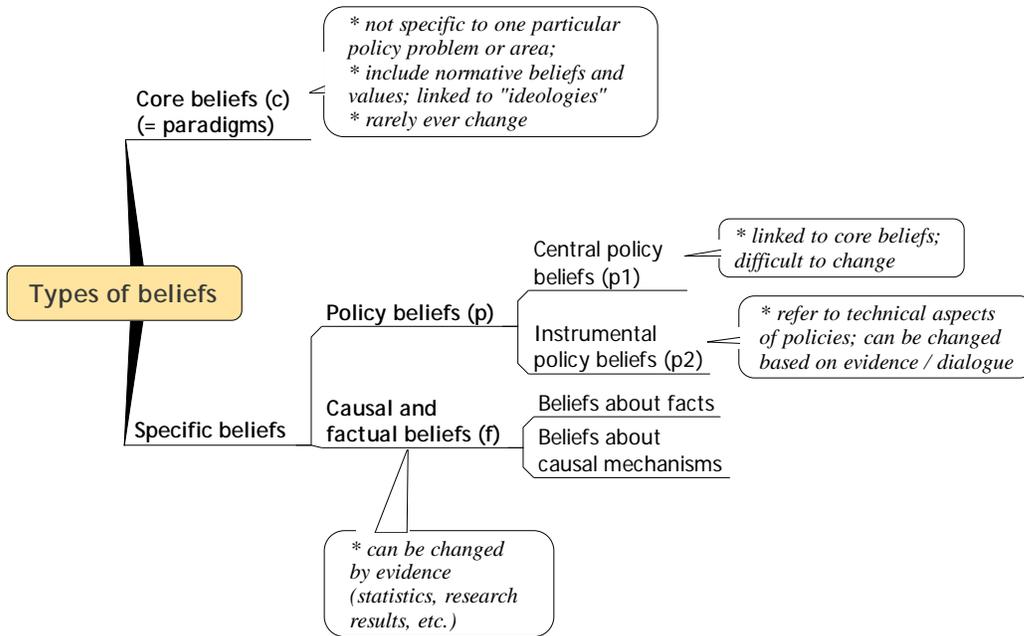
The first step in the analysis is to identify these coalitions and assess their beliefs and their resources. Sabatier and Jenkins-Smith (1993) distinguish three different types of beliefs: (1) core beliefs related to fundamental values, which rarely change; (2) policy beliefs, which refer to policy solutions and may change, and (3) secondary beliefs, which refer to minor aspects, for example, the way in which solutions are implemented. For this study, we adopt a modified classification of beliefs.

3.1.3 Classifying Beliefs

The classification scheme presented in Figure 3, is used to identify the different belief systems. The classification scheme is informed by Sabatier and Jenkins-Smith (1993), but not identical with their approach. Two criteria are considered to classify beliefs: (a) How likely is it that actors change those beliefs? This is important for policy change to happen. (b) What role can research and empirical evidence play in changing these values?

As indicated in Figure 3, a basic distinction is made between core beliefs and specific beliefs. Core beliefs are not specific to the policy area under consideration and include normative positions and values. They can also be referred to as “paradigms.” Specific beliefs are related to the policy areas under consideration, in this case the electricity supply to agriculture. Among the specific beliefs, we further distinguish (a) factual and causal beliefs (beliefs about facts and causal mechanisms, which can be changed by presenting credible empirical evidence), and (b) policy beliefs (beliefs about the relevance of a problem and about appropriate strategies to address it).

Figure 3: Classification of Beliefs



Policy beliefs are further distinguished into (i) central policy beliefs, which are linked to the core beliefs and central to a policy area, and, hence, more difficult to change, and (ii) instrumental policy beliefs, which refer to certain technical aspects of a policy, and are, therefore, more likely to change.

3.1.4 Political resources

As shown in Figure 2, the resources that discourse or advocacy coalitions dispose of are, next to beliefs, a major factor in explaining political processes. Resources consist of financial resources (economic capital), social networks (social capital), skills and experience (human capital). What is essential for influencing policies is the comparative ability of a discourse or advocacy coalition to mobilize such resources in

order to create “political capital,” which can be defined as the resources that an actor can use to realize outcomes that are in the actor’s perceived interest (Birner and Wittmer, 2003). Strategies to create political capital may include electoral leverage, lobbying, public protest, use of convincing narratives in the public discourse, and securing support from international actors. Actors can also use scientific evidence to create political capital in the policy process.

In the framework displayed in Figure 2, the outcome of the policy process depends on the comparative ability of different advocacy coalitions to build political capital and use it in the political process. Political capital is also important to pursue the implementation of a reform policy (compare Thomas and Grindle, 1990). The political frame conditions play an important role in shaping the formation of advocacy coalitions and their interaction. Important frame conditions include the characteristics of the political and administrative system, the party system, and the political culture (compare Birner and Wittmer, 2004).

3.1.5 Windows of opportunity

Kingdon’s (1984) approach to identifying “windows of opportunity” can be applied to better understand the timing of policy changes. This approach is based on a criticism of the conventional policy cycle model, which assumes that policies are brought on the political agenda, adopted, implemented and evaluated in a systematic way. For analytical purposes, it is useful to distinguish among three different “streams”: a policy stream, a problem stream, and a politics stream. In the policy stream, policy solutions are constantly generated by research institutions, think tanks, and government agencies, but they are not necessarily implemented, and to some extent they end up in the “garbage can” without being adopted. The problem stream describes the problems in the respective policy sub-system, which may increase or decrease over time. Shocks such as natural disasters may occur and lead to a sudden policy pressure. The politics stream captures ongoing changes in the political system. Windows of opportunity for policy changes arise if these streams can be “coupled”. For example, changes occur in the political stream, such as a move towards electoral democracy, political entrepreneurs can make use of this situation to promote the adoption and implementation of policy options that may have been in the policy stream for quite some time. The political entrepreneurs may be members the advocacy coalitions, or policy brokers, who can mediate between coalitions. Kingdon’s approach is primarily used here to assess the timing and sequencing of reform strategies.

3.2 Empirical Research Methods

3.2.1 Fertilizer

Based on the conceptual framework and the hypotheses suggested by the body of literature cited above, the following research questions were addressed in the empirical research:

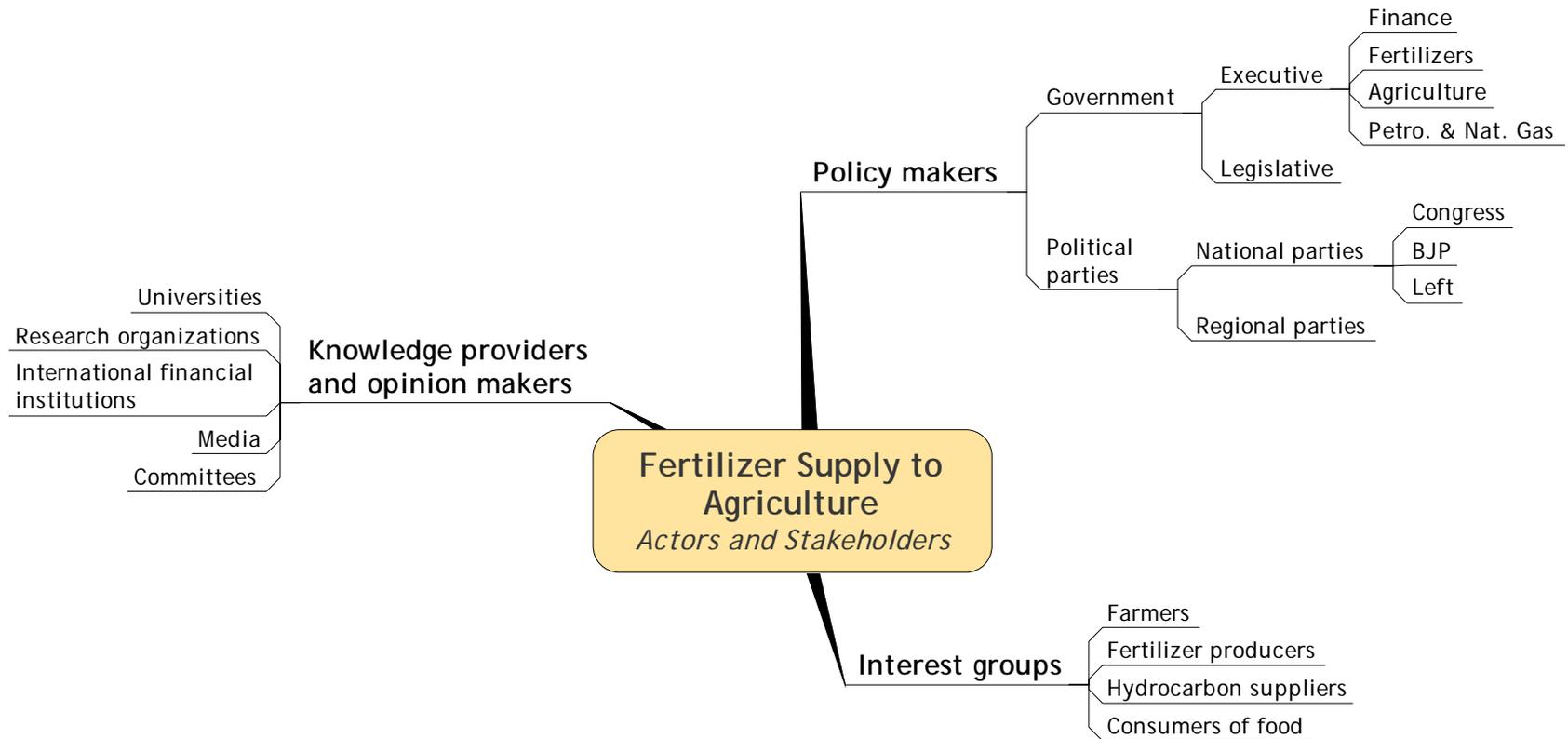
- Was there a close congruence between a specific interest group's position and the content of the reform package either at the point of agenda-setting, i.e. drafting a policy reform package or at the point of legislation? (interest politics)
- Was subsidy reform proposed by one government department held up at the agenda-setting phase by other competing bureaucratic interests? (bureaucratic politics)
- Was policy proposed by the government rejected either by state chief ministers (or their representatives) or by the political leadership of regional parties at the central level? (coalition politics)
- Was government-proposed legislation for reform of the fertilizer subsidy regime vetoed by parliamentary players? (parliamentary politics)
- Did deeply entrenched ideas shape the outcome of the reform process? (role of ideas in policy)

Figure 4a) displays the actors and stakeholders groups involved in fertilizer policy. For data collection, the project focused on the ministries of finance, agriculture, chemicals and fertilizers and petroleum and natural gas at the federal level as well as various state governments, farmers' groups, political parties, interest groups from the fertilizer industry. These actors and their objectives were identified through the existing literature identified above. The hypotheses outlined above were examined on the basis of evidence collected from these actors and also from other sources. Evidence from these actors was collected through interviews. Table 1 summarizes the respondents, which included members of central bureaucracies responsible for policies, politicians who have held positions in these ministries, representatives of major interest groups in each sector including fertilizer association and farmers' groups, academics and journalists who cover these sectors and write about them. The interviews were semi-structured as the investigator usually started each interview with a set of questions. However, the set of questions were not the same for all interviewees since most interviewees had specific fields of expertise and focus. The questions were tailored to specific interviewees.

Various news-sources were used to document actor interests and the actions undertaken by them as well as to validate information obtained during interviews. In addition, Parliamentary debates on budgets, subsidies and farm inputs were mined to supplement the above and to confirm data found elsewhere. Finally, we relied on government documents, particularly those published by the Ministry of Finance, the Planning Commission as well as Annual Reports of the Department of Fertilizer, the Department of Agriculture and Cooperation and the Ministry of Petroleum and Natural Gas for primary and numerical data. Several reports such as those written by the Joint Parliamentary Committee (1992), the High Powered Review Committee (1998) and the Expenditure Reforms Commission (2000) and the Alagh Committee Report (2005) were consulted in order to gain a better understanding of the issues involved in this reform process and what has been recommended before.

Figure 4: Stakeholder Maps

a) Fertilizer



b) Electricity supply to agriculture

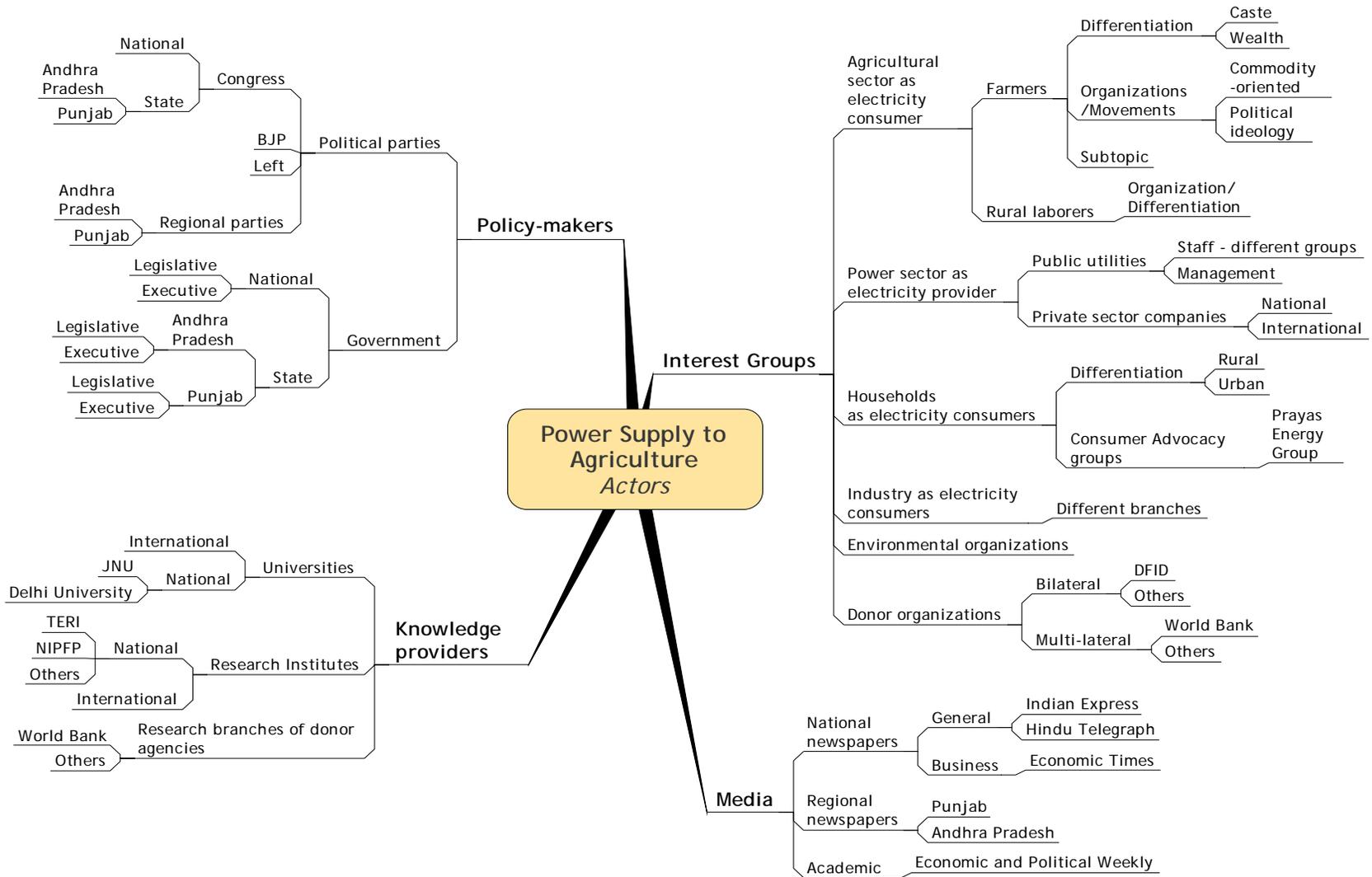


Table 1: Interviewed Stakeholders and Key Informants (Fertilizers)

Type	Sector	National
Government agencies	Fertilizer	5
	Finance	4
	Agriculture	1
	Petroleum and natural gas	1
	Others	1
Interest groups	Fertilizers	7
	Agriculture	4
Party representatives / MLAs		5
Think tanks, academia, journalists		7
Total		35

Table 2: Interviewed Stakeholders and Key Informants (Electricity)

Type	Sector	Punjab	AP*	National	Inter-national	Total
Interest groups	Agriculture	5	2	3	-	10
	Electricity	2	2	1	-	5
	Environment	1	1	-	-	2
Government agencies	Agriculture/water	2	2	2	-	6
	Electricity	1	3	1	-	5
Party representatives / MLAs**		5	7	3	-	15
Donor agencies / IFIs***		-	1	7	4	12
NGOs		1	1	-	-	2
Think tanks, academia, journalists		7	2	9	-	18
Total		24	21	26	4	75

* Andhra Pradesh

** Members of State Legislative Assembly

*** International Financial Institutions

3.2.2 Electricity supply

Guided by the literature and the conceptual framework presented above, a wide range of documents, including policy documents and media reports were reviewed. For the collection of primary information, the conceptual framework was used to develop a map of relevant actors, institutions and knowledge sources, which is displayed in Figure 4b.

As in the case of fertilizer, the empirical research strategy was to interview, as far as possible, at least one representative of each of the actor group displayed in Figure 4b. Table 2 summarizes the stakeholders and key informants that were interviewed in the course of the study. The respondents based on the literature review, internet searches,

key informant information and the snow-ball system (asking interview partners to identify further interview partners).

The interviews were conducted in the period between January and June 2006. An interview guideline was developed, which was, as in the case of fertilizer, adjusted according to each respondent and used for a semi-structured interview. The interviews lasted between 1 and 1.5 hours and concentrated on the following aspects:

- 1) Experience and perceptions regarding the political process related to electricity supply to agriculture;
- 2) Views and perceptions regarding key aspects of the topic, especially quality of electricity supply, electricity pricing and subsidies, links between electricity and groundwater use, links between groundwater and surface irrigation, and links with other agricultural policies.
- 3) Assessment of different reform options regarding electricity pricing, metering, organizational reform in the electricity sector and groundwater and energy conservation.
- 4) Additional information, depending area of expertise;

As far as possible, the interviews were tape recorded and transcribed for further reference and analysis. A table was prepared, which summarized the information of the interviews in a comparative perspective. Key information for each interview was also coded and entered into a SPSS data base. Analyzing the interviews, attention was placed on identifying major story-lines and underlying belief systems in the argumentation of the respondents (see Chapter 2).

Part II: The Political Economy of Fertilizer Supply to Agriculture

4 Fertilizer Policy in India: Evolution and Reform Initiatives

As a part of its strategy for a Green Revolution, the Government of India established a policy framework designed to encourage the production, distribution and facilitate the use of fertilizers in India. To further support the aim of increased fertilizer use for the purpose of increasing food grain production, the government kept the farmgate price of fertilizers mostly unchanged for over a decade till 1991.

Since 1991, the government has made several attempts to rationalize and/or reduce the fertilizer subsidy. Since the fertilizer subsidy is channeled through the fertilizer firms to reach farmers, economists argue that both farmers and the industry receive a portion of the subsidy. The government can, therefore, achieve its goal of fertilizer subsidy rationalization in two ways. One, by increasing the price at which the farmer purchases the fertilizer, the government can reduce the total amount spent on fertilizer subsidy. This is politically costly in a country where the size of 80% of the farms is categorized as small or marginal (defined as those under 2 hectares in size). Understandably, although prices have increased over the past 15 years, the increases do not reflect the increase in the cost of production. One alternative way to increase the farmgate price and reduce government expenditure on fertilizer subsidy would be by providing a fixed amount of subsidized fertilizers to all farmers and charging market prices from the owners of large and medium-sized farms, who need to buy more (ERC, 2000). A second way of reducing the government's total expenditure on fertilizer subsidy would be by forcing higher efficiency standards on the domestic fertilizer industry and changing the policy governing the pricing and distribution of fertilizer (HPRC, 1998, ERC, 2000). Such restructuring would ensure that the entire government expenditure on fertilizer subsidy would reach farmers. A third way would be for the government to directly transfer money to farmers and completely decontrol the fertilizer industry. Although the first two have been attempted, the resultant impact on the subsidy bill is not significant. This section describes what the government has done during the last three decades to first set up a policy framework to encourage fertilizer production and use and then, since 1991, to change that framework to bring about greater efficiency in the production of fertilizers, to reduce expenditure on the fertilizer subsidy, to bring about regional and nutritional balance in use of fertilizers and to better target the fertilizer subsidy.

4.1 The Retention Price-cum-Subsidy Mechanism

While fertilizer pricing in India has been government-determined during most of post-independence period, a policy framework conducive to rapid increase in fertilizer production was not set up until the late 1970s. The Retention Pricing-cum-Subsidy Scheme, as the policy framework was called, was based on determining the ex-factory prices for fertilizer produced by each production unit without any regard for common norms of efficiency. This ex-factory price was called the retention price and was specific to each unit, depending on the capacity utilization and raw material consumption of each. The pricing mechanism allowed for a post-tax return of 12 per cent on the net worth of the unit. The farmer bought fertilizers at a government controlled price known as the issue price (also referred to as the farmgate price or the maximum retail price or MRP). The difference between the retention price and the issue price was paid to the unit by the Government of India. In addition, the government also reimbursed the producer the cost of transporting the material from the production facility to the farmgate. In 1977, the RPS was introduced for nitrogenous fertilizers and was later extended to complex fertilizers in 1979 and to Single Super Phosphate in 1982.

4.2 Rationale for reform

The RPS was largely successful in achieving its objectives. Domestic fertilizer production increased from 40.93 lakh tons in 1981-82 to 144.39 lakh tons in 2002-03. Corresponding figures for fertilizer consumption were 60.64 lakh tons and 160.94 lakh tons respectively (MoA, 2004: 172). Rice and wheat production increased from 53.63 million tons and 36.31 million tons in 1980-81 to 72.65 million tons and 65.10 million tons in 2002-03 (MoA, 2004: 43, 46). However, the subsidy created certain distortions in the economy, chiefly fiscal and environmental. These distortions provided the rationale for reexamining the need for and the format of the subsidy. Below we discuss the primary considerations that prompted such a reexamination.

4.2.1 Fiscal burden and the issue of targeting

The subsidy on fertilizers increased from Rs. 381 crore in 1980-81 to Rs. 11015 crore in 2002-03 (NIPFP, 2004: 3). The subsidy continues to increase and is expected to approach Rs 30000 crore in 2006-07. Among explicit subsidies provided under the federal budget, the subsidy on fertilizers has been the second largest sum exceeded only by the fertilizer on food. By 2002-03, total explicit subsidies in the central budget

constituted 1.8 per cent of the gross domestic product. Fiscal stress is one of the main reasons officials give for their attempts to reduce the subsidy on fertilizers.³ This objective has to be weighed against the likelihood of a 13.5 million ton drop in foodgrain production, if fertilizer prices were to increase to import parity level (NIPFP, 2004: 15).

A second consideration in the context of fiscal stress has to do with the incidence of the fertilizer subsidy. As noted earlier, calculations suggest that over the long term, 62 per cent of the subsidy on fertilizers has gone to farmers and the remaining 38 per cent has gone to fertilizer manufacturers. In the context of fiscal stress, it is difficult to justify the latter. Although Singh (2004) finds evidence of inter-class equity in distribution of fertilizer subsidy, a more recent and disaggregated study finds a more complex story. It finds that the fertilizer subsidy is distributed less than equitably among different classes of farmers in Punjab while in Andhra Pradesh, the fertilizer subsidy acts as an equalizing factor (Vashishtha et.al. 2006). In general, a case can be made against the need to subsidize owners of medium and large farms. The counter-argument often encountered during interviews is that taking away subsidies from large farmers would increase the price of food, which in turn affects poor consumers.

4.2.2 Increasing public investment in agriculture

The anticipated growth rate in agriculture and allied sectors in 2000-01 was 0.9%. There was concern about the falling share of public investment in agriculture – this decline was attributed to the increased level of subsidy for food, irrigation, fertilizer and others that were eating up a large proportion of public expenditure (MoF, 2000). It has been suggested that reversing this trend, i.e. increasing public investment and decreasing spending on subsidies will lead to higher growth rates (Gulati, 2006). Such public investment could go toward providing better seeds and irrigation facilities, necessary conditions for remedying regional inequities in fertilizer adoption and use (Singh, 2004).

4.2.3 Balanced use of nutrients

The existing subsidy regime is seen to have contributed to unbalanced use of nutrients. Broadly, farmers use nitrogenous (N), phosphatic (P) and potassic (K) fertilizers in cultivation. The optimal ratio of use of N, P and K is 4:2:1. While that ratio was never close to ideal in India, it has faced substantial distortion during the past decade and a half. In 1991-92, immediately prior to decontrol of phosphatic and potassic fertilizers,

³ Interviews with officials in the Ministry of Finance in June-July 2005 and August 2006.

that ratio was 5.9:2.4:1. After decontrol, the ratio deteriorated to 9.5:3.2:1 in 1992-93 (Venugopal, 2004: 105). Subsequently, that ratio has improved to 6.9:2.6:1 during 2003-04 (MoA, 2005: 48). Improving this ratio further remains one of the key objectives of policy reform (MoF, 2006). Increasing the price of urea is also seen as one way of bringing about balanced use of nutrients.

4.2.4 Improvement in regional disparities in fertilizer use

There is considerable variation across states in India in use of fertilizers. Uttar Pradesh, Andhra Pradesh, Punjab and Maharashtra together account for 48.5 per cent of total fertilizer consumption in India. The intensity of fertilizer application in Punjab is more than double the Indian average of 84 Kg/hectare (MoA, 2004: 176). There is also regional variation in the imbalance discussed in the above section. Farmers in northern India in general and in Punjab in particular use nitrogen more intensively than do farmers in southern Indian states, for example in Andhra Pradesh and Tamil Nadu. In Punjab, this leads to more wastage of nitrogenous fertilizers, more ground water pollution and ultimately lowers the fertilizer response ratio, i.e. the amount of grain yielded by application of one unit of fertilizer. In AP, since there is overall deficiency in all the nutrients and a higher fertilizer response ratio, there is a possibility for increasing yields if adequate infrastructure and a suitable policy environment are provided. Further, it is found that both Punjab and AP have a lower level of response ratio than prevalent in the rest of India. Together, these suggest that a combination of suitable policy, infrastructure and technology can work towards more even application of fertilizer all over India (Vashishtha et.al. 2006). It is further pointed out that adoption of technology in the form of intensive soil testing through various means can lead to more judicious application of fertilizers and subsequent saving on fertilizer subsidy.

4.2.5 Efficient allocation of natural gas

Finally, it is reasonable to argue that the government aims to achieve these ends without resorting to distortions in allocation of resources in other markets, most notably in natural gas market. The fertilizer industry continues to lobby the government to allocate subsidized gas to its units. If the government agrees to secure and allocate cheap gas for the industry, the expenditure on fertilizer subsidy would fall. However, the government, so far, has stuck to its plans of liberalizing hydrocarbon markets and natural gas prices are on their way to becoming market-determined as the amount of gas at administered prices keeps shrinking.

4.3 Increases in farmgate price of urea

As mentioned earlier, the selling price of fertilizers to the farmers, which is determined by the Ministry of Finance, remained unchanged between July, 1981 and July 1991. In August 1991, faced with a balance of payments crisis and a need to borrow from the IMF, the government announced an increase of 30% in the issue prices of fertilizers. The selling price of urea was subsequently reduced by 10% in August 1992. It increased by 20% in June 1994, by 10% in February 1997 (Rs 3660/ton), by 10% in January 1999 to Rs 4000/ton, by 15% to Rs 4600/ton in February 2000 and by 5% to Rs 4830 in February 2002. In addition to these increases, the government also attempted to increase the price of urea through the budgetary process in 1998 and 2003 but was unsuccessful in both cases. The budget presented in February 2003 announced an increase in the price of urea by a mere Rs. 240 PMT, which works out to a nominal increase of Rs 12 per bag of fertilizer. However, the government was forced to roll back the increases in both cases due to opposition from within the party and from others. The current price is Rs. 4830 per tonne exclusive of local levies. It is pointed out that despite the above-mentioned price increases, there has not been a substantial decrease in fertilizer subsidies over the years largely because of “increasing production/consumption and increases in the costs of inputs of indigenous fertilizers and prices of imported fertilizers from time to time” (MoCF, 2005: 22). The increasing subsidies are also blamed on “cost of various inputs/utilities, such as coal, gas, naphtha, rock phosphate, sulphur, ammonia, phosphoric acid, electricity, etc...” (MoCF, 2005: 22).

It has been suggested that the farmgate price of fertilizer be further increased but that a mechanism be developed so that small and marginal farmers are not affected by such price increases. A targeting mechanism was suggested by the Expenditure Reforms Commission, whereby all farmers would be given a fixed amount of subsidized fertilizers. The fixed amount that was recommended would have satisfied the total fertilizer demand of small and marginal farmers. Any farmer (arguably those with larger farms) who needed more would have to buy it at market price. This mechanism has never been adopted due to concerns about the government’s administrative ability to implement such a scheme.

4.4 Reforming the retention pricing system

A second way of rationalizing the fertilizer subsidy would involve focusing on the efficiency of domestic fertilizer industry, perhaps considering decontrol of the

domestic fertilizer industry so that it becomes more efficient and thus can produce at a lower cost.

Several government committees recommended throughout the 1980s that the RPS should be dismantled for all fertilizers – notable among these were the High Powered Committee of Secretaries on RPS (1986), the BICP Report on Normative Retention Price of Fertilizers (1992). However, this pricing framework remained unchanged till the 1990s.

4.4.1 Decontrol of P and K

In 1991, the government decontrolled the production of low analysis fertilizers such as Ammonium Chloride (ACL), Ammonium Sulphate (AS) and Calcium Ammonium Nitrate (CAN). In 1992, following the recommendation of the Joint Parliamentary Committee (JPC) on fertilizer pricing, the government decontrolled the production and import of phosphate and potassium-based fertilizers and extended a flat-rate ad hoc concession of Rs. 1000 PMT on these fertilizers – both domestically produced and imported. In 1994, the concession on imported DAP was withdrawn in order to encourage domestic production. In April 1997, the concession on domestically produced DAP was increased to Rs 3750 PMT while that on imported DAP was increased to Rs 2250 PMT. The JPC, however, recommended that the subsidy framework for urea should continue without any changes.

4.4.2 Dismantling the RPS

Subsequently, several other committees recommended that the RPS for urea be dismantled and that subsidies be more narrowly targeted so that they reached only the intended beneficiaries (HPRC, 1998, ERC, 2001). The RPS for nitrogenous fertilizers, however, remained unchanged till 2003 when the government announced a “New Pricing Scheme.” The following are the highlights of the new scheme:

- The new scheme came into effect from April 1 2003 and was to be implemented in stages. Stage-I would last a year from April 1 2003 to March 31 2004. Stage-II would be of two years’ duration, from April 1 2004 to March 31 2006. The duration of Stage-III was to be decided by the Department of Fertilizers (DOF) after review of the implementation of Stage-I and Stage-II.
- The goal of the new pricing policy was to “encourage efficiency parameters of international standards based on the usage of the most efficient feedstock, state-of-art technology and also ensure viable rate of return to the units.”
- Existing urea units were divided into six groups based on the vintage and the feedstock used. On the basis of these factors, the units were to be given a group-

based concession instead of the former unit-wise retention price. The groups into which the units were divided included the pre-1992 gas based units, post-1992 gas based units, pre-1992 naphtha based units, post-1992 naphtha based units, fuel oil/low sulphur heavy stock (FO/LSHS) based units and mixed energy based units.

- Each group would have its own norm – the weighted average retention price in that specific group. Units that had very high or very low retention prices (a deviation of 20% and above with respect to the group average) were to be treated as outliers. The final norm for each group would be arrived at after the final weighted average group retention price is calculated leaving out the outliers.
- If the RP of a unit on March 31 2003 was lower than the group average, that unit will continue to receive the existing RP. The outliers would receive a concession rate calculated as the group average plus a structural adjustment equivalent to 50% of the difference between their RP and the group average. If a unit's RP were greater than (but not high enough to be an outlier) or equal to the group average, its concession rate would be equal to the group average.⁴

This new pricing scheme, as adopted, dealt with the issue of support to the industry and distribution of fertilizers without dealing with the issue of farmgate pricing. It also avoided addressing the issue of feedstock pricing, particularly the crucial issue of natural gas pricing and availability.

4.4.3 Current state of policy reform

The implementation of the new scheme started on April 1, 2003 and the first stage was completed on March 31, 2004. The duration of stage-II was to be two years from April 1, 2004 to March 31, 2006. Further implementation of the scheme was contingent on the ability of the government to formulate a suitable policy for the third stage of the scheme. Accordingly, a Working Group under the chairmanship of Dr. Y.K.Alagh was constituted on December 10, 2004, to review the effectiveness of Stage-I and II of New Pricing Scheme (NPS) for urea units and to formulate a policy for urea units for Stage-III. It was also asked to “examine issues pertaining to formulation of feedstock policy especially with regard to nature, pricing and availability, demand and supply of urea upto the end of XI Five Year Plan, fixing milestones for conversion of existing naphtha and FO/LSHSS-based units to NG/LNG, mode of determination and

⁴ “Contents of DOF’s letter dated 30.1.2003 containing salient features and modalities of implementation of new pricing scheme for urea units,” Department of Fertilizers website, http://fert.nic.in/fertilizersubsidy/new_pricing_urea.asp

methodology of payment of concession to urea units, de-control of movement and distribution of urea, balanced fertilisation through urea pricings etc.”

The Alagh Committee submitted its report in December 2005 and recommended several alternative strategies for rationalizing and trimming the fertilizer subsidy. Beyond the first best strategy of moving towards one normative price for the entire industry, the report has considered a second best strategy of moving to two feedstock-specific normative prices and one-time capital subsidy for conversion to natural gas. Finally, it considers the alternative of continuing with the second stage of NPS for fixed number of years by which time the industry would increase its efficiency further. At the time of this writing, the issue has been presented to the cabinet and primarily the third option is being considered seriously by the government (MoCF, 5/19/05).⁵

At the present time, urea is the only fertilizer, the production of which is controlled by government policy and which is sold at a statutorily notified retail price. De-controlled phosphatic and potassic fertilizers are sold at indicative retail prices while the price of single superphosphate is determined by state governments. Thus, in this paper, when we talk of rationalizing fertilizer subsidies, we are really talking about decontrolling the nitrogenous fertilizer sector and the pricing and distribution policies that shape that sector. Although this paper does not address the pricing of potassic and phosphatic fertilizers, it is necessary to point out that the existing price structure favors the purchase of nitrogenous over potassic and phosphoric and has already led to an unbalanced use of fertilizers and may be causing severe environmental imbalance. Any price increase in the latter two will only worsen the imbalance and the resultant impact on the environment.

The discussion above seeks to illustrate that despite the government’s attempts during the past fifteen years to rationalize the subsidy on fertilizer, it has been unable to make a significant dent in the subsidy bill and for the first time in the history of the country, this year, the bill on fertilizer subsidy is likely to exceed the bill on food subsidy. In order to understand why fertilizer subsidy has increased when several finance ministers since 1991 have suggested pruning it, we focus on the interests of the various stakeholders and the role played by them in the context of reform. In the following sections, we examine the processes of farmgate pricing and fertilizer policy reform separately and conclude with our observations and recommendations.

⁵ Interview with an official in the Government of India in New Delhi, August 7 2006.

5 The Politics of Farmgate Pricing

As discussed earlier, one way of limiting the size of the fertilizer subsidy bill is by increasing the farmgate price of fertilizers. Since the price is administered and not market-determined, the attempt to increase it has to go through the budget-making process, which is inherently political and deliberative in nature. In this section, we focus on two aspects of the government's attempt to increase the price – one, the success and failure to increase the farmgate price through the budget process and two, the attempt to limit the political nature of the process by making yearly increases automatic, i.e. accepting the Expenditure Reforms Commission recommendation of building in a 7% price increase every year. Looking at these two aspects of the pricing process, this section argues that the politics of farmgate pricing has been shaped by coalition politics and by strong farm interests represented at the highest levels of decision-making by cabinet level ministers.

5.1 Farmers' interests and interest articulation

The protectionist bias in agricultural policy in India is justified in the name of small and marginal farmers and poor consumers. It is argued by policymakers that the farmgate price of fertilizer needs to be kept low so that small and marginal farmers are able to purchase and utilize these inputs.⁶ It is further argued that low input prices keep food prices low and this protects poor consumers. While protecting the interests of small and marginal farmer is indeed important in a poor country, it is not entirely clear that keeping the farmgate price of fertilizers unchanged is necessary to ensure that end result. It has been suggested that the farmgate price of fertilizer be increased and a direct subsidy to small and marginal farmers be given in order to protect their interests. While the veto on increasing farmgate price of fertilizers comes from farmers regardless of farm-size, the resistance to target the subsidy to small and marginal farmers comes, not unexpectedly, from owners of medium and large farms. In order to understand the interests of farmers and interest articulation in the farm sector, we focus on the use of fertilizers by different groups of farmers and the structures of farm sector interest articulation in India.

5.1.1 Use of fertilizers and farmers' interests

It is logical to expect farmers, who are the biggest beneficiaries of the fertilizer subsidy, to be the most vocal opponents of price increase. However, since utilization

⁶ Interviews with officials in several ministries in New Delhi in June-July 2005 and August 2006.

of the fertilizer subsidy is not uniform across regions or across crops, we can expect to see some variation in interest articulation by farmers on the topic of fertilizer subsidy. For example, there is greater utilization of subsidies by northern farming states rather than by farmers throughout the country as well as by farmers in irrigated areas than by those in non-irrigated areas (Singh, 2004). Four major fertilizer consuming states, namely, Uttar Pradesh, Andhra Pradesh, Punjab and Maharashtra together accounted for 48.5 per cent of total fertilizer consumption in India (Venugopal, 2004:125). Wheat, paddy and sugarcane growers receive more than half of the subsidy on fertilizers (Singh, 2004). However, in terms of intensity of fertilizer use, small farms showed as much or greater intensity than large farms thus illustrating that small farmers indeed benefit from this subsidy. This would lead us to expect a higher degree of interest articulation regarding subsidies by farmers from regions that receive larger subsidies and by growers of wheat and paddy. While it is true that farm leaders from Punjab and Uttar Pradesh, two of the largest users of the subsidy, are the most vocal opponent of price rise, farmers from other states do not take a different position with respect to fertilizer subsidy and price increase.

5.1.2 Channels of interest articulation among farmers

Interest articulation in the farm sector is mainly taken up by large farmers who are generally well-represented in all major political parties and therefore, in the Lok Sabha. Policy intervention on behalf of farmers is done primarily by political leaders identified with large and medium farmers' interests. In general, all political parties and farmers' groups argue that they speak for small and marginal farmers. Exclusive representation of small and marginal farmers is mostly absent. This is due to typical collective action problem – the small and marginal farmers are too numerous and too fraught with problems for them to have the time, information and organizational ability to come together. Farmers' groups such as the All India Kisan Sabha and a few other leftist farmers' groups claim to be the true representatives of small and marginal farmers. An analytical problem associated with identifying who really does lies in the fact that there are no formal lists of members of farmers' associations – there is little effort behind regular membership drives.⁷

During the 1980s and 1990s, regional farmers' movements emerged in several states in India (Brass, 1995, Assadi, 1997, Varshney, 1998). These were largely apolitical and were led by local activists rather than political leaders. Although these movements were led mainly by large and middle peasants, small and marginal farmers also joined

⁷ Interviews with leaders of several farmers' associations, June-July 2005 and July-August 2006.

these farmers' movements for higher support prices since there was an identity of interests among all farmers on that issue. Such a unified movement does not exist today and farm sector interest articulation is quite fragmented.⁸ Not surprisingly, however, there is strong unified support for keeping input prices low regardless of the size of farms and all political parties and farmers' organizations demand that the farmgate price of fertilizers should be maintained at existing levels. However, as the discussion in the next section demonstrates, if fertilizers were made available through a pricing structure in which higher prices had an impact only on owners of large and medium farm, then we find clearer evidence of lobbying and exercising veto from representatives of large and medium farm-owners from northern states of Punjab, Haryana and Uttar Pradesh. Such interest articulation takes place through the debates in the legislature, by office-holding politicians with strong farm sector ties and through consultation processes within ministries.

5.2 The role of the executive and the legislature in setting farmgate price of fertilizers

It is necessary to first understand which Indian political institutions shape the farmgate price of urea. Through the budgetary process, the Ministry of Finance sets the farmgate price and proposes increases in the price in consultation with the Department of Agriculture and Cooperation. The approval for such an increase has to come from the legislature. Within the executive branch, farmers' interests are articulated by several cabinet ministers as well as the Department of Agriculture and Cooperation. In the legislature, a majority of the Members of Parliament have primarily rural constituencies. In addition, various ministries consult with farmers' groups during discussions on policy change in fertilizers.

5.2.1 The politics of increases in farmgate prices 1991-2006

Attempts to increase the farmgate price has succeeded in six cases and failed in two. What lessons can we glean from both sets of cases? First, let us take the cases in which the government was able to increase the farmgate price of urea. In general, this was done during a period when the minimum support prices of wheat and paddy were increasing at a slightly faster pace, thus acting as a quid pro quo for increases in fertilizer prices.⁹

⁸ Interviews with leaders of farmers' associations, June-July 2005 and July-August 2006.

⁹ Between 1990-1991 and 2003-2004, the minimum support price on paddy increased by 168% and on wheat by 193% whereas the price of urea increased by 105%.

Next, we look at the cases where the government was unable to increase the price as per its own announcement and had to roll-back the proposed price increase in 1998 and 2003. The passing of the annual budget is a political process in which the government has a very high stake since the inability to get the budget passed would lead to a fall in the government. At the same time, the opposition has higher participation and visibility in the process. It is equally important to note that almost *no politician* in India wants to be seen as anti-farmer. The debate on farm sector is structured in such a way that that is how a politician would be perceived if s/he supported a hike in farmgate prices at a time when there is widespread crisis in the countryside and thousands of cases of farmers' suicides. This highlights the problem associated with the way the debate on urea pricing and policy is framed, a topic to which we turn at the end of the paper where we discuss the ways in which ideas have shaped policy in this area. In both cases, substantial opposition came from within the coalition, particularly from the National Democratic Alliance (NDA) partner Shiromani Akali Dal of Punjab. In 2003, the proposed increase in fertilizer price had to be rolled back because senior members of the Bharatiya Janata Party openly opposed such an increase. It is clear that a legislative majority in such a case is a necessary but not sufficient condition for successful price increase.

5.2.2 Automatic annual increases in farmgate prices

Since increasing the price of urea through the budgetary process is fraught with problems, it has been informally suggested that the price-setting mechanism be taken out of the budgetary process. More formally, the ERC suggested that the government accept its recommendation of an automatic increase of the farmgate price by 7% every year (ERC, 2000). It also suggested a pricing structure whereby large farmers would have had to face market-determined (and thus higher) prices after receiving a fixed amount at subsidized prices. In the existing regime, they receive all the fertilizer they need at subsidized prices. Under the proposed pricing scheme, all farmers would have had access to 120 Kgs of subsidized fertilizers (through tradable coupons) while only those who cultivated to primarily sell in the market and would thus need to purchase more fertilizers, would have had to pay market prices for the amount they bought over and above 120Kgs. This proposal would not have affected the small and marginal farmers but would have required farmers with medium and large farms to pay market prices.

The recommendations to insulate the pricing mechanism from political pressures as well as to create a dual pricing structure were rejected because farm leaders associated with large and medium farmers were in charge of the decision-making process and *it was their interest that was at stake*. Ajit Singh (a cabinet level minister in charge of

agriculture) and S. S. Dhindsa (a cabinet level minister in charge of fertilizers), who were both members of the Group of Ministers that formulated the new pricing scheme under the NDA government, were instrumental in keeping the issue of farmgate pricing of urea out of the new fertilizer policy. The GoM was asked to evaluate the recommendations made by the ERC in order to determine which specific recommendations would be adopted as government policy. Singh and Dhindsa vetoed the inclusion of a yearly increase in farmgate price of fertilizers within the policy package.¹⁰ Singh argued that further subsidy reduction should be based on improving manufacturing efficiency rather than by charging higher prices to farmers. Given that the support base of these two ministers comprises primarily owners of medium and large sized farms in Punjab and Western Uttar Pradesh, such an outcome was not unexpected (Kumar and Kumar, 2002).

Dhindsa and Singh's actions in keeping farmgate pricing of urea out of the 2003 policy package had a serious impact on fertilizer policy and the possibility of reducing the subsidy. By keeping farmgate pricing out of the new policy framework and perhaps more crucially, by keeping the issue of farmgate pricing within the budgetary process, they were able to keep further increases in farmgate price at bay. The official retail price of urea has now remained constant since 2002.

6 The Politics of Reforming the Policy Framework for Urea Producers

Another way of reducing and rationalizing the fertilizer subsidy is by changing the policy structure that governs the production and distribution of urea. Earlier we discussed the details of the retention pricing-cum-subsidy scheme and the new pricing scheme that succeeded it. Here we analyze the major obstacles that stood in the way of reforming the retention pricing scheme in urea, obstacles that continue to plague the NPS reform process today. We have already noted that in 2003 the RPS was replaced by a new pricing scheme and that currently the formulation of the third phase of the NPS is under review.

Several factors have slowed down and stalled the reform process. First, the fertilizer industry has continuously lobbied to maintain the protection it receives from the

¹⁰ Interviews with former ministers Mr. Ajit Singh and Mr. Sukhdev Singh Dhindsa in New Delhi in 2005 and 2006.

government under the existing regime. Second, institutionally this process is aided by the fact that there is an entire department devoted to protecting the interests of the industry and thus both at the bureaucratic and at the cabinet level, the industry's position is strongly represented and argued vis-à-vis other positions advocated by other government departments. Third, the mandate of the energy sector to liberalize prices and the inadequate availability of natural gas pose real economic challenges to structural changes in the industry. Finally, those advocating policy change are clearly in the minority vis-à-vis those advocating the status quo.

6.1 Interests of urea producers

It is common practice in political economy to focus on potential winners and losers of policy change when analyzing why such change has not taken place. The issue of subsidy rationalization in fertilizers has all the hallmarks of interest group politics. There is a small group of highly organized and wealthy fertilizer firms that will likely lose if the protection accorded to them is withdrawn. The role of a second group of highly influential, politically well-connected, rich farmers who lobby against higher prices for inputs, has already been highlighted in the previous section. At the same time, the potential beneficiaries of reform are difficult to identify, numerically large, dispersed and unaware of their interests. In this section, we look at the role played by the fertilizer industry in shaping the reforms. We argue that while the industry has played an important role in influencing the debate on fertilizer subsidy and shaping reforms, the inability of the government to decontrol urea is not entirely an outcome of the lobbying power or money power of the fertilizer industry.

6.1.1 Fertilizer industry

From humble beginnings in 1906, the Indian fertilizer industry has come a long way in supplying a substantial portion of the fertilizers used in India. The Green Revolution in the late sixties gave an impetus to the growth of the fertilizer industry, a new policy framework and increased government assistance in the seventies pushed its development forward and the eighties continued to witness significant additions in capacity in fertilizer production. The installed capacity has now reached a level of 119.98 lakh metric tonnes of nitrogen and 54.20 lakh metric tonnes of phosphate nutrients, making India the third largest fertilizer producer in the world (MoCF, 2005: 2).¹¹ There are 57 large size fertilizer plants in the country, manufacturing a wide

¹¹ After reassessment of capacity, the total installed capacity of urea in the country is actually much higher at 205.12 lakh MT.

range of nitrogenous, phosphatic and complex fertilizers. 29 of these units produce urea. For the purposes of our analysis, this group is the focal point. The question we ask here is whether some among those 29 have a higher interest in influencing the current policy process than others and whether they are, in fact, acting accordingly.

Arguably, a high cost producer is more likely to resist market-oriented reforms than a low cost producer. Input prices make up 30-35 per cent of the total cost of production of urea (HPRC, 1998) and total spending on energy accounts for almost 90 per cent of the variable cost of production of urea (FAI, 1995). The retention prices of units reveal that units that use natural gas as feedstock have, on an average, lower retention prices than those that use naphtha, fuel oil and other feedstock. To look at differences in interests, it makes sense to classify urea producers into categories according to feedstock use. 60% of urea manufacturers use natural gas as feedstock, a little less than 30% use naphtha and the rest use other feedstock such as fuel oil, LSHS. Of these, the units that use natural gas are the most efficient and cleanest producers of urea and in general, use a smaller subsidy than the naphtha-based manufacturers. Under a decontrolled policy framework for urea, the naphtha and fuel oil based plants cannot compete with imported urea (ERC, 2000). Thus there is a strong and obvious reason for the naphtha-based manufacturers to lobby for the continuation of the RPS. We should expect mainly the naphtha-based firms to lobby for the existence of the status quo. However, due to the nature of the interest articulation process in the fertilizer industry it is difficult to find substantial evidence to support the claim that it is indeed only the naphtha-based manufacturers who have lobbied the government. Further, in the context of the debate on natural gas pricing and availability, even gas-based manufacturers have a strong interest in lobbying for the status quo. The supply of subsidized natural gas is decreasing and the pricing of natural gas going to be increasingly determined by market forces. Given the higher prices of natural gas that fertilizer units are going to face in a decontrolled natural gas market, it is not clear how many units will remain viable in the face of imports. We therefore argue that regardless of the feedstock used, urea manufacturers lobby the government to not undertake liberal reforms.

The fertilizer industry articulates its interest and lobbies with the government through various channels. First, it has a representative trade body called the Fertiliser Association of India (FAI). The FAI acts as the industry's representative on government committees such as the Fertilizer Industry Coordination Committee (FICC) on a regular basis and on others on an ad-hoc basis. The FAI also lobbies with the different ministries that are involved in the policy process on fertilizers and uses

the media extensively to put its position across.¹² Second, individual owners of firms lobby their cases with specific ministers and ministries. Third and most importantly, the industry's interests are the primary concern of the Ministry of Chemicals and Fertilizers. Institutionally, this is where the fertilizer industry gets most of its power and influence from. Finally, there is anecdotal evidence of the industry's effort at influencing policy through graft. From all accounts, the last factor is crucial in shaping fertilizer policy. However, it is not possible to find hard evidence that would enable us to draw strong conclusions about the influence of graft. In the absence of such evidence, we have to rely mostly on published evidence of efforts of the FAI to influence policy through its position within the FICC and the Fertilizer Ministry as well as through articulating its position in the media on a regular basis. The reform process itself is opaque and does not allow us to analytically trace specific reform outcomes to specific lobbying efforts. Under the circumstances, we can identify the industry's overall position and help establish that the fertilizer industry, through FAI lobbying, shapes policy on fertilizers. However, it does not allow us to draw conclusions as to which part of the industry (naphtha-based vs. gas-based) and which specific firms have played a larger role in shaping policy on fertilizer subsidy. We are also faced with a further analytical problem – the arguments made against liberalization by the FAI are almost identical to the arguments made by bureaucrats and politicians. This poses a further analytical problem in arguing that interest group lobbying has played a determinant role in stalling the reform process.

During every reform effort, the industry has lobbied to stall reforms (Kumar, 1999, Gupta 2003a, 2003b). Besides articulating its own positions, the industry also sought to do four things: first, by aligning its argument with the government's view on food security, it has made the case that the fertilizer subsidy is an inherent part of the government's concern for food security and as such cannot be touched without heavy political costs. FAI officials argue, as do several people in the government, that since the fertilizer subsidy has played a substantial role in increasing food productions and thus strengthening food security in India, a reduction in the subsidy will jeopardize that achievement.¹³

Second, whenever a proposal has been made to deliver the fertilizer subsidy directly to the farmer, the FAI has highlighted the logistical problems associated with such a task, again closely mirroring the views of most politicians and bureaucrats (Damodaran 2000, Gupta 2000c, Gupta 2003a, Financial Express 2/24/06).

¹² Interviews with officials in the FAI in New Delhi in June-July 2005.

¹³ Interviews with officials in the FAI and in MoCF, June-July 2005.

Third, it has publicly exploited differences within the government in order to push its own agenda. In particular, it has made the argument that the fertilizer subsidy really functions as an intra-economy transfer to benefit the government agencies that supply hydrocarbons (Gupta 2000a, Gupta 2000b, Kaushik and Gupta 2003). In an opinion piece written shortly after Finance Minister Sinha announced that the government was going to implement the recommendations of the ERC, the FAI's chief economist accused the Finance Ministry of going against the stated preferences of the MOCF as well as of the Chief Ministers of several Indian states, all of whom had written to the Finance Minister and the Prime Minister, expressing their reservations with regard to the implementation of the ERC recommendations and its impact on farmers and poor consumers. The piece further highlighted the lack of coordination of the ministries involved in the process. The FAI has also repeatedly made the argument that the fertilizer subsidy is, in reality, an intra-economy transfer that benefits government owned oil and gas companies by transferring money from the budget head to the surplus of government undertakings in the petroleum and gas sectors (Kaushik and Gupta 2003). In reality, there is no restriction on the fertilizer industry with regard to directly importing its feedstock at competitive prices, should we accept its argument that the petroleum and gas firms are charging them abnormally high prices. In fact, the Expenditure Reforms Commission noted that the industry has not made vigorous efforts at securing sources of supply of natural gas, arguing that the government should do so (ERC 2000: 45).

Finally, it would be wrong to conclude that on the whole only naphtha-based units have an interest in resisting a change in the subsidy regime. Overall, India's gas-based manufacturers have been found to be globally competitive. However, that conclusion was reached based on natural gas priced at Rs 2850/mcm. The gas supplied to fertilizer sector by domestic public sector firms is now priced at Rs. 3850/mcm. However, the supply of gas available at that price is not adequate for the entire fertilizer industry and the government has allowed future gas finds to be made available at higher market-determined rather than administered prices. The goal of the government is to decontrol natural gas prices and bring it to import parity levels. It is unclear what impact such prices will have on the competitiveness of the fertilizer industry. While the fertilizer industry is controlled by the government, when feedstock prices go up, the fertilizer units, in most cases, can pass on the hike in prices by charging higher retention prices from the government. However, this would not be possible in a decontrolled scenario where those units would have to face competition from foreign, particularly Middle-East based exporters who have access to cheap

natural gas. This suggests that both naphtha-based and gas based urea manufacturers have an interest in lobbying to keep decontrol at bay.

6.2 Institutions: Bureaucratic politics

While the fertilizer industry's power as a strong lobby is not doubted, it is necessary to investigate the institutional features of the Indian political system that enable them to further their goals. It is argued here that the existence of a separate Department of Fertilizers within the Ministry of Chemicals and Fertilizers allows the fertilizer industry's concerns to be heard both at the level of bureaucratic interactions and within the cabinet.

Fertilizer policy reform takes the form of an executive decision and does not require legislative approval. It can best be understood by focusing on the various stakeholders within the government that are involved in the reform process and by identifying the positions taken by these stakeholders and the process through which any resulting conflict between them is resolved.

Within the Government of India, the various stakeholders that are involved in the policy process on fertilizers include the ministries of fertilizers, agriculture and finance. The interests and the mandate of the ministry of petroleum and natural gas also play a significant role in the policy-making process. Other ministries that have, at least, a minor role to play in the issue are commerce, railways and transportation. Here it is argued that the efforts of the finance ministry to decontrol the urea sector have been thwarted in part because of the sector-specific interests of the ministries of fertilizers and agriculture.

6.2.1 Ministry of Finance

The primary role of the Ministry of Finance (MoF) is to maintain macroeconomic health of the country with an eye on the overall performance of the economy. It prepares the budget for the federal government every year, identifies strengths and weaknesses of the economy and uses various fiscal instruments to shape the economy's future path, in the process reflecting the vision of the political leadership.

In doing its job, the MoF faces several challenges. First, it needs to contain the federal deficit. The ballooning fertilizer subsidy bill contributes to the federal deficit and thus the job of reducing it falls on the MoF. Since it is now clear that a large chunk of the subsidy goes to the fertilizer manufacturers as well as to large farmers whose claim on that subsidy can be contested, the MoF's own mandate requires it to address the subsidy issue. The MoF has repeatedly recommended that the government should limit

the total amount of subsidies as well as should make sure subsidies go to those who these are intended for: in this case poor farmers and consumers (Srivastava et al 2003, NIPFP 2004). Several efforts to reform fertilizer subsidy have originated in the MoF. The call for a need for consensus on subsidy issues originated in this ministry (The Hindu, 04/26/01). The MoF, for example, ordered the Expenditure Reforms Commission report and the call to adopt it fully came from the Finance Minister in 2001. In 2005, the ministry engaged in widespread consultation with stakeholders in order to find ways of cutting the main subsidies on food, fertilizer and petroleum.¹⁴

Besides containing the deficit, the ministry is in charge of allocating money to different sectors through the annual budget. One sector that has suffered over the past decade and a half is agriculture, in which there has been little public investment. The ministry realizes that if new investments are to be made, resources have to be freed from other parts of the budget and subsidies is one area that has received attention from the MoF in this context.¹⁵ However, the MoF does not have the capacity to unilaterally decide by what amount the subsidy will be cut and what the new policy structure in the sector would be. For that it has to negotiate with the Ministry of Chemicals and Fertilizers on the one hand and the Ministry of Agriculture on the other. It also has to play a role in deciding feedstock prices that have a major impact on the price of fertilizer and therefore the subsidy associated with it. In recent years, only the Planning Commission's overall views on the desired priorities of the government are similar to that of the MoF. All other ministries involved in the process of fertilizer subsidy rationalization have different and sometimes conflicting interests.

6.2.2 Ministry of Chemicals and Fertilizers

The role of bureaucratic politics as a factor in fertilizer subsidy rationalization gains further salience due to the existence of an entire department, namely, the Department of Fertilizers (DoF) within the Ministry of Chemicals and Fertilizers (MoCF), devoted to the fertilizer sector. This acts as a major obstacle to policy change. First, the ministry's specific goal is to protect the interests of that industry. Its web-site says it is committed to "(S)tructural reforms in the fertilizer sector including technological upgradation to make it efficient and price competitive by international standards within the broad framework of available feedstock and other raw materials" (<http://fert.nic.in>). Its main clients are public sector undertakings, multi-state

¹⁴ Interviews with officers in the Department of Economic Affairs, Ministry of Finance in New Delhi in July 2005 and August 2006. Minutes of some of these consultations are available at the following website: http://finmin.nic.in/the_ministry/dept_eco_affairs/economic_div/foodsubs.htm

¹⁵ Interviews cited in n. 15.

cooperative societies and private companies in fertilizer sector. Any policy that would go against the interests of a majority of its clients is likely to be unacceptable to the politicians and bureaucrats who make up the ministry. It negotiates on behalf of the fertilizer industry with other ministries whose interests may conflict with that of the fertilizer sector. Its position on fertilizer subsidy has been different from that of the MoF.¹⁶ While in theory, the ministry accepts the need for decontrol, in practice, it finds it difficult to advocate such decontrol since it would hurt the viability of the industry.

The MoCF hosts a Fertilizer Industry Coordination Committee, which was created to administer and operate the Retention Price Scheme and continues to administer the New Pricing Scheme for urea. The committee includes members from the industry and thus allows the latter to have a direct voice in the policy process and a forum for interacting and influencing secretaries from the ministries of finance, industry, agriculture, petroleum and natural gas and from the tariff commission. While stakeholder consultation in policymaking is both necessary and beneficial, such close interaction between the industry and the MoCF makes it difficult to convince the ministry of the need for any change that would significantly hurt the industry's interest. In its consultations with other ministries, the MoCF has argued that given the natural gas availability and allocation in India, the fertilizer units are performing at the highest efficiency possible. They would be more efficient if more of them were able to switch to natural gas from naphtha and other more expensive and less efficient feedstock, but in light of the inadequate availability of natural gas and the need for India to produce urea domestically, it is unfair to blame the industry for the high subsidy bill.¹⁷

6.2.3 Ministry of Agriculture

The primary mission of the Ministry of Agriculture (MoA) is to protect the interests of Indian farmers. In the context of fertilizers, their interests lie in ensuring adequate and timely availability of fertilizers as well as making sure that the farmer is offered fertilizer at an affordable price. In the area of fertilizer pricing and policy, it plays a role in fixing the farmgate price. It is also involved, as a stakeholder, in all discussions and deliberations on policy matters. While it recognizes there is room for prices to go up, it opposes such hikes anyway because of the anti-farmer perception associated

¹⁶ Interviews with present and former officials in the Ministry of Chemicals and Fertilizers and the Ministry of Finance in New Delhi in June-July 2005 and August 2006.

¹⁷ Interview with officials in the Ministry of Finance in New Delhi, August 2006.

with such a policy measure. Since the issue of farmgate price of urea is decided at the legislative level, the MoA has not had to openly fight to protect its core constituents, the farmers, in the same way as the MoCF has had to fight for the fertilizer industry. At the same time, the MoA tends to oppose policy change because of the uncertainty associated with such a course of action and the possibility of supply disruptions and price increases that may follow from it.¹⁸

6.2.4 Ministry of Petroleum and Natural Gas

The final important player in the fertilizer pricing debate is the Ministry of Petroleum and Natural Gas (MoPNG), whose primary objective is to aid exploration and mining of hydrocarbons as well as meet the growing demand for hydrocarbons in India. In doing so, it also protects the interests of its clients – the public sector oil and gas production and distribution firms, some joint venture firms and private enterprises in the sector. Through the Vision 2020 document adopted by the government to restructure this sector, the ministry is mandated to bring prices of hydrocarbons to import parity levels. Naphtha prices, accordingly, were freed at the end of the 1990s. While the price of natural gas has not been freed in such a public manner, the decline in availability of gas that is offered through the administered price mechanism (APM) and the ability of private and public producers to charge market prices will ensure that in the future natural gas prices in India will increasingly be determined by market forces rather than by government fiat (Jackson 2005). In the past, the Ministry of Chemicals and Fertilizers fought to make sure that the administered price stayed low. It is now widely recognized that given the declining availability of gas earmarked for administered pricing, the APM will have to be replaced almost entirely by market-determined pricing by 2009-10¹⁹. For the MoCF, the focus is now shifting from fighting for maintaining the low administered prices to securing adequate supply of natural gas, if any policy reform is to be carried out successfully although the fertilizer industry is still lobbying for a “rationalized hydrocarbon policy” that ensures priority allocation for APM gas and LNG at reasonable rates to cover the entire need of the fertilizer industry (Sriram 2005).

We have argued in this section that fertilizer policy reform in the past has slowed down not only because the fertilizer producers’ lobby has been well-organized and active in its efforts but because the Indian political system offers the fertilizer industry

¹⁸ Interviews with officials in the Department of Agriculture and Cooperation and Ministry of Finance in New Delhi, June 2005 and August 2006.

¹⁹ Interview with an official in the Petroleum Planning and Analysis Cell in New Delhi, August 2006.

an exclusive channel through which it can articulate its interests at the interministerial as well as at the cabinet level because of the presence of a Department of Fertilizers and a Minister for Chemicals and Fertilizers, a minister who usually holds cabinet rank. However, the support for the status quo in policy has come not only from the Department of Fertilizers but also from the Department of Agriculture and Cooperation in the Ministry of Agriculture. Support for change in policy has come only from the Ministry of Finance and from the Planning Commission. Given this balance of power in favor of and against change, it would be tempting to conclude that bureaucratic politics alone has derailed progress on fertilizer policy reform. While it is argued here that bureaucratic politics has played an important role in the government's attempt at initiating reform in this area, it is also necessary to ask why the Ministry of Finance has not been able to garner more support for its liberal position. In the context of interbureaucratic politics, Varshney (1998: 181) argues that "the Finance Ministry in particular stands out in its influence over the conduct of economic policy." Its power arises from its control over the government's purse strings. Why, then, has the Finance Ministry not been able to successfully push fertilizer subsidy reform? Why, when reforms have taken place successfully in other sectors, have reforms in fertilizer stalled repeatedly? In order to answer this question, one must look at the ideas that dominate the debate on fertilizer policy reform as well as the size, the arguments and the position of the group arguing in favor of reforms vis-à-vis the size, the arguments and the position of the group arguing in favor of status quo.

6.3 Ideas: Self-sufficiency in fertilizer production

The literature on economic reforms in developing countries underscores the importance of ideas in policy change. The focus of the literature has been on how liberal ideas are transmitted through various media from the advanced industrial states to developing countries and how the spread of these ideas play a role on economic liberalization. Scholars have sought to explain the initiation of India's economic reforms in 1991 as a product of the work of such a liberal policy elite, a number of whom were educated or employed in the United States and Britain and in international organizations (Shastri, 1995). The reforms were successfully launched, according to this argument, because the economic crisis in 1991 offered a window of opportunity to the liberal policy elite to push their recommendations through the political process. In case of fertilizer policy reform, the government was not able to utilize windows of opportunity in the past. When the NDA came back to power in 1999, several factors favorable for policy change in fertilizers were present. The budget deficit both at the federal and state level was close to crisis levels. India lost a case in the World Trade

Organization which required it to remove quantitative restrictions on imports of a large list of products. This put pressure on the government to reform its policy on urea since it was anticipated that urea imports would have to be freed. However, reform attempts did not meet with success.

Following Paul Sabatier's network advocacy approach (1993), we argue here that policy change has not occurred because the advocacy coalition for change was and continues to be much smaller and less articulate about the benefits of alternative policies as compared to the coalition in favor of the existing paradigm.

While an overall consensus on economic liberalization seems to dominate the rhetoric on economic policy in India and even discussions on fertilizer policy, the consensus on a number of ideas from the pre-1991 period seems to have not undergone any change at all. This makes it difficult, if not impossible, to translate the liberal rhetoric into political action. In fact, it often appears that the Indian policy process is moving in opposite directions (Bardhan, 2003).

In the area of fertilizer policy, the debate is between those who argue that policy change is necessary because the current policy structure causes fiscal and environmental distortions in the economy and those who argue that India needs to be self-sufficient in urea manufacturing. The former group argues that the fertilizer subsidy has outlived its purpose and the industry needed to be pushed in the direction of higher efficiency. Given India's adequate foreign exchange reserves, serious thought should be given, this group argues, to increasing imports. It therefore argues that the policy framework associated with the subsidy needs to be dismantled in favor of a more market-oriented approach towards production and distribution of fertilizers. This would benefit the country and particularly the farm sector by freeing up resources for much-needed investments in agriculture.

Those who advocate self-sufficiency in fertilizer production argue that the Indian industry has attained a high level of efficiency and that achievement will be reversed if the industry is exposed to global competition. The domestic industry, according to this view, is constrained only by the inadequate supply of natural gas. According to this view, the industry is providing a service to the government in helping it achieve its goal of food security and therefore cannot be treated like other industries.²⁰ They further point out, that if the fertilizer subsidy is withdrawn or substantially reduced,

²⁰ Different versions of such an argument were made by government and industry representatives during interviews.

food production will likely decrease and food prices will increase, affecting India's food security.

The coalition in favor of change is smaller in size than the coalition of forces advocating the status quo. The latter also articulates its case more forcefully and benefits from the fact that the opponent's position is less clearly defined and less assertive. This paper argues that although the containment and targeting of subsidies have constituted an important element of the fiscal reforms program started in 1991, the government did not seriously consider decontrolling nitrogenous fertilizers until 2000. Even then, the consensus was on partial decontrol and on adoption of policies that would not lead to the large-scale closure of domestic urea plants. This is due to the dominance of the advocacy coalition that favors status quo and the persistence of protectionist ideas in the realm of agricultural policy in India. We argue that the ideological hegemony of the need for self-sufficiency in fertilizer has shaped the consensus on the decontrol of the fertilizer sector. The paper further argues that the perceived need for self-sufficiency in nitrogenous fertilizers, and the continued focus on food and livelihood security conflicts with the expressed preference for decontrol of nitrogenous fertilizers. Decontrol of that sector will require that some manufacturing units, both in the public and private sectors, be closed down. It may also mean that in the short term, there will be a decline in food production and a substantial increase in the price of foodgrains. None of these seem an acceptable price to pay in order to bring about rationalization of the fertilizer subsidy.

The acceptance of a new idea within the government is often time-consuming and the transformation of the consensus is often incomplete, leading to adoption of policies that do little to substantially change the overall policy framework and its effects. Equally importantly, ideas that have historically dominated the policy debate in an issue area are not easily unseated in favor of new ones. Sabatier (1993) argues that understanding the process of policy change and the role of policy-oriented learning requires a time perspective of a decade or more. The impetus for the overall framework for agriculture related policies in India came from the days of food and foreign exchange shortage in the 1960s. In the context of chronic shortage of food grain and the foreign exchange needed to buy food from international markets, the focus naturally was on making India self-sufficient in foodgrain production. Being self-sufficient in fertilizer production was a corollary to that. While the importance of self-sufficiency in food production for achieving food security is not denied, several things have changed since the 1960s.

First, since the 1970s, India has been growing enough food grains to achieve food security for its citizens (Varshney, 1998). What faces India today is a "paradox of

persistent hunger” (Pinstrup-Andersen, 2002). According to estimates by the Food and Agriculture Organization in 2001, over 225 million Indians remained chronically undernourished while the government strained its budget to procure and store 58-60 million tons of food grains. It is recognized that the existing food management paradigm is able to mitigate India’s new food security problem only partially. Therefore, the problem India faces in the area of food security is different from the problems it faced in the 1960s and thus requires a different solution. Second, the lack of shortage of foreign exchange in recent years has meant that in case of shortages India can buy food and fertilizers from international markets. Third, by the late 1990s, overall growth in the agricultural sector in India had slowed down to 1.8 per cent per annum and the government described the state of affairs as “a matter of concern” (Ministry of Finance, 1999). Substantial public investment is needed if the agricultural sector is to grow at the rate of 4 per cent per annum as envisioned by the government. Finally, as a result of the developments mentioned above, the consensus on agricultural policy framework is shifting very gradually and there is a small coalition of actors who argue that substantial changes in the overall policy framework are needed.²¹ During this decade, that shift away from the earlier consensus has been evident in some policy changes undertaken by both federal and state governments. However, that shift has not been large enough to replace the existing definition of food security and to accept the idea that the country can make a bigger shift to imported urea instead of trying to maintain self-sufficiency at extremely high cost.

6.3.1 *The coalition in favor of change*

The coalition that advocates a more market-oriented policy framework for nitrogenous fertilizers comprises the Ministry of Finance, some members of the Planning Commission, international financial institutions such as the World Bank, a section of the English language print media and individual economists. While the overall position of this coalition of actors is to recommend a more market-oriented policy framework for fertilizers, the positions taken are neither identical nor constant. For example, the Ministry of Finance was less focused on subsidy reduction last year and more intent on subsidy targeting. As the fertilizer subsidy bill has ballooned this year, the focus has shifted more sharply on subsidy reduction.²² Such variation in the ministry’s emphasis is also seen if one read successive issues of the annual *Economic Survey* brought out by the ministry before the announcement of the annual budget. While the Ministry of Finance does not consider the necessity for self-sufficiency in

²¹ Interviews with officials in the Ministry of Agriculture, agricultural economists, July-August 2006.

²² Interviews with officials in the Ministry of Finance in New Delhi in July 2005 and August 2006.

urea production sacrosanct, it has not advocated strongly in favor of import liberalization and even partial decontrol of the sector. The Planning Commission also emphasizes the need for better targeting of all kinds of subsidies and is more concerned with the distortions and deleterious effects on natural resources and cropping patterns that the fertilizer subsidy contributes to (Planning Commission, 2002).

The World Bank has repeatedly identified subsidization of agricultural input as a major problem that stands in the way of India's effort to fight poverty and to re-energize the agricultural sector. In recent reports, it has endorsed the position taken by the Ministry of Finance on fertilizer subsidy rationalization and has urged the government to scrap the retention price scheme (World Bank 1998). However, in policy debates in India, bureaucrats and politicians do not cite international financial institutions while pushing liberal policies because it can be politically counterproductive.²³

The Indian media has also supported reform efforts made by the government. Editorials in publications such as *Business Line*, *Indian Express* and *Economic and Political Weekly* have noted that the fertilizer subsidy has added to budgetary deficits and that resulting rise in subsidy has led to a steep fall in the public investment in agriculture, affecting, in the process, the farm sector growth rate. The English language press in India is widely read only by a small section of influential urban elite and middle class and thus cannot be considered representative of public opinion in rural areas. Therefore, the media's support for a liberal policy framework can easily be dismissed in policy debates as not being entirely relevant for the welfare of the rural population. While several economists are in favor of liberal policies and have made recommendations as heads of government-appointed committees, their role merely as advisors to the government constrains their influence in the absence of sufficient political support.

6.3.2 *The coalition in favor of the status quo*

The coalition that advocates the continuation of the existing policy framework for fertilizers consists of the Ministry of Chemicals and Fertilizers, the Ministry of Agriculture, political parties, farmers' groups, the Fertilizer Association of India. While here too, one may find divergence in the views expressed, there seems to be a fair degree of consensus on the need for self-sufficiency in nitrogenous fertilizer

²³ Interviews with several bureaucrats and politicians in New Delhi in June-July 2005 and July-August 2006.

production. According to this group, the need for self-sufficiency is justified for maintaining adequate production of food grains necessary for maintaining India's food security.

The MoCF is charged with the responsibility of making policies for fertilizers and thus carries substantial weight in any policy debate. The MoCF is also the main advocate for self-sufficiency in fertilizer production. A recent annual report of the Ministry of Chemicals and Fertilizers states that the government's professed policy has been to achieve "maximum possible degree of self-sufficiency in the production of nitrogenous fertilizers based on utilization of indigenous feedstock" (MoCF 2005: 2). The Ministry of Agriculture also carries substantial influence on account of its role in representing the interests of farmers and supports MoCF's position. Thus, in debates at the interministerial as well as the cabinet level, there are usually two strong voices in favor of status quo. The idea that self-sufficiency in urea production is necessary for maintaining food grain production and thus food security has not been seriously challenged at the policymaking level.

If one accepts the need for self-sufficiency, then the menu of options for reform is substantially restricted. All committees appointed by the government have made recommendations for policy change within the parameters of maintaining self-sufficiency. They have, therefore, recommended moving towards a uniform normative price and eventual conversion from other feedstocks such as naphtha to natural gas (HPRC 1998, ERC 2000, Alagh Committee 2005). However, since the supply of natural gas is not adequate to cover the needs of all fertilizer units, such reform has not taken place. It is also necessary to point out that although the debate on subsidy reduction in India is at least 15 years old, the need to reform the policy structure governing nitrogenous fertilizers was not accepted by the policy community till the end of the last decade. From the above discussion, it seems reasonable to conclude that a complete consensus on the liberalization of fertilizer industry has not replaced the more widespread consensus on the need for self-sufficiency in fertilizer production. In the next section, we discuss the policy implications of our findings.

7 Policy Implications for Fertilizer Policy Reform

This section presents the policy implications from the analysis in the previous sections. Here, we consider various policy options available for changing the policy framework that governs the production of nitrogenous fertilizers in India as well as for reducing and rationalizing the fertilizer subsidy.

It is clear from the discussion above that fertilizer policy change and fertilizer subsidy reduction and rationalization has proved to be extremely difficult challenges for all Finance Ministers since 1991. Several policy options have been suggested (HPRC 1998, ERC 2000, Gulati and Narayanan 2003, Alagh Committee 2005). Some of the policy options have been tried and others rejected. As noted earlier, the progress in policy change has been marginal. Therefore, it is useful to consider various reform options and to assess them against multiple criteria. Special emphasis is then placed on assessing the reform options in terms of their political feasibility. Table 3 displays a qualitative assessment of the reform options against multiple criteria, and Table 4 contains an assessment of these reform options regarding different aspects of political feasibility.

7.1 Assessment of reform options against multiple criteria

This section gives an overview of different reform options, distinguishing between options for changing the policy framework for urea producers, and options for increasing the farmgate price for fertilizers. The criteria to assess these reform options are derived from the stated goals of the Government of India.

7.1.1 Criteria to assess reform options

Arguments in favor of policy reform have emphasized the need for dealing with fiscal issues, correcting imbalance in nutrition, encouraging efficiency in the fertilizer industry and encouraging efficient allocation of scarce resources such as natural gas. Correcting the distributional implications of the current policy framework, which benefits larger farmers more than smaller farmers, has also been a major argument of the reform. Hence, it is useful to consider the impact of different reform options on the income of small and marginal farmers in the short and medium term. In addition to these criteria, Table 3 also includes the impact on food prices, considering the role of the food security argument in the public debate.

7.1.2 Options for changing the policy framework for urea producers

Complete decontrol of fertilizer industry

Complete decontrol of the fertilizer industry would entail dismantling of the existing group retention prices framework and de-canalizing urea import. Such decontrol would more than double the farmgate price of urea.

Table 3: Assessment of Reform Options in Fertilizers against Multiple Criteria

	Fiscal sustainability (state)	Farmers' income – general, short term	Small/ marginal farmers income short term	Food price level (<i>depends on other policy decisions</i>)	Domestic fertilizer firms incomes	Nutrient balance in soil
Maintaining status quo (group-wise retention scheme and today's farmgate price of urea)	-	+	+	- (?)	+	-
Options for changing the policy framework for urea producers (farmgate price unchanged)						
Liberalizing import of urea (decanalizing)	-/+ ¹⁾	+	+	-/+ ¹⁾	- for non-gas ? for gas-based plants	-
Partial decontrol of fertilizer industry along with adoption of single producer price	+	+	+	- (?)	- for non-gas +/0 for gas-based plants	-
Setting up urea plants abroad	+	+	+	- (?)	- for non-gas 0 for gas-based plants	-
Preferential natural gas pricing for domestic urea industry	-	+	+	- (?)	+ for non-gas 0 for gas-based plants	-
Options for changing farmgate price (no change in policy for producers)						
Increase farmgate price						
a) Without targeting	+	-	-	+	+	+
b) With targeting	+	-	0	+	+	+
Options for improving nutrient balance without changing policies and prices						
Use of technology and knowledge to increase productivity	+	+	+	-	+	+

Note: “+” = increase “-“= decrease “0” = no effect

- 1) Depends on the international market price of urea. Based on past long-term trends in prices, it may be argued that fiscal sustainability improves.

Table 4: Assessment of the Political Feasibility of Reform Options

	<i>Material interests</i>					<i>Paradigms</i>	
	Large farmers	Small farmers	Fertilizer companies	Gas suppliers	Tax payer in general	Market-oriented	Welfare-state oriented
Maintaining status quo (group-wise retention scheme and today's farmgate price of urea)	+	+	+	0	-	-	+
Options for changing the policy framework for urea producers (farmgate price unchanged)							
Liberalizing import of urea (decanalizing)	0	0	-	0	+	+	-
Partial decontrol of fertilizer industry along with adoption of single producer price	0	0	0 for gas-based; - for non-gas based plants	0	+	+	+
Setting up urea plants abroad	0	0	0 for gas-based; - for non-gas based plants	+	+	+	+
Preferential natural gas pricing for domestic urea industry	0	0	+	-	-	-	+
Options for changing farmgate price (no change in policy for producers)							
Increase farmgate price							
a) Without targeting	-	-	0	0	?	+	-
b) With targeting	-	0	0	0	+	+	+
Options for improving nutrient balance without changing policies and prices							
Use of technology and knowledge to increase productivity	+	+	0	0	+	+	+

Note: “+” = favor “-“= oppose “0” = neutral; “x” measure accepted as necessary

The most immediate impact of this policy option will be to put the domestic fertilizer industry on a path of efficiency. It is anticipated that a section of the Indian industry, particularly those using non-gas feedstocks, will be unable to survive such a policy change. Depending on the international price of urea, some gas-based plants may have to close down as well. Adopting this policy prevents the subsidy from going to the domestic industry, thus remedying some of the distributional concerns associated with the subsidy. This policy option is consistent with the government's objective of liberalizing hydrocarbon prices. For obvious reasons, such a policy measure can only be seriously suggested when the international price of urea is lower than the domestic price.

Partial decontrol of fertilizer industry along with adoption of single producer price

The second policy option is to move the entire industry towards increased efficiency by paying subsidy on the basis of one normative cost instead of several that exist today. This would not be accompanied by de-canalization of imports. This policy option would achieve the twin objectives of increasing efficiency while reducing the quantum of subsidy paid out. In order to survive, all non-gas units will need to convert to natural gas as feedstock. If adequate supply of natural gas is not available, this policy option will also lead to closure of some non-gas based units. The distributional concerns associated with the current regime will be corrected for the most part.

Continuation of existing group-wise concession scheme

The third policy option is to continue with the stage II of the group-wise concession scheme that exists today. Under this option, the only savings in subsidy may come from marginal increases in efficiency and from better application of knowledge and technology as suggested in Vashishtha et.al. (2006).

Setting up urea plants abroad

A fourth option is for Indian producers of urea to locate their production outside India in areas that are close to the source of natural gas. This allows the government to reduce its expenditure on subsidy and to maintain self-sufficiency in production of urea.

7.1.3 Policy options for increasing farmgate price

So far we have discussed policy options for decreasing subsidy and increasing efficiency of the fertilizer industry without considering ways of addressing the issue of farmgate pricing. Needless to say, in the absence of any interventions in farmgate pricing, the first two policy options would lead to substantial increase in urea price,

decrease in incomes of farmers, decrease in urea use and subsequent fall in food production. While this may lead to correction (and possibly overcorrection) of imbalanced use of urea in northern India, it will definitely worsen the balance in south, where N use is low. However, it is necessary to point out that no government would contemplate adopting this policy without some intervention in determining farmgate price of urea. Those options are discussed below.

Yearly increase in farmgate price of urea

A yearly increase in the farmgate price of urea at a fixed percentage rate over a period of five years is seen as a way of decreasing the expenditure on fertilizer subsidy (Vashishtha et.al. 2006). This policy option would also contribute to correcting the imbalanced use of nitrogen in northern India. Such a price increase may lead to an unwarranted decrease in urea use in the south. However, urea use in the south can be encouraged despite a price rise by resorting to other policy measures such as providing better irrigation, seeds and extension services.

Targeting fertilizer subsidy on small and marginal farmers

Targeting is another issue that merits attention in discussions of rise in farmgate price of urea. Targeting the subsidy on small and marginal farmers, it is argued, will not only decrease the subsidy bill but would also effectively deal with distributional concerns. Since raising the farmgate price of urea is economically and politically difficult, it has been suggested that farmers be subsidized directly through fertilizer coupons or cash transfers. However, the logistical and administrative difficulty associated with this option is considered too daunting to give it a try. Further, it is pointed out that if the price of urea goes up for medium and large farmers, food prices will go up, leading to a rise in procurement price for the government and an eventual escalation in the food subsidy bill. Vashishtha et.al. (2006), however, argues that if accompanied by appropriate technology and a suitable policy environment, food security will not be affected. The concern that a rise in urea price will lead to a fall in farmer incomes can be remedied by a small rise in support prices for grains.

7.2 Political feasibility of policy options

Table 4 presents an assessment of the political feasibility of the reform options discussed in the previous framework. Since the analysis has shown that both interests and ideas matter in this debate, the table does not only assess the impact of different reform options on the material interests of different stakeholders, it also assesses to which extent the option is consistent with the market-oriented paradigm on the one hand and a welfare-state oriented paradigm on the other, which emphasizes the need for food self-sufficiency.

7.2.1 Options for changing the policy framework for urea producers

While notionally considered a possibility by the Ministry of Finance in recent years, complete decontrol along with de-canalization of import has never been seriously given much attention by a majority of stakeholders. The difficulty associated with this option arises from the fact that it would force the government to reconsider its commitment behind achieving self-sufficiency in urea. Adoption of this policy calls for a paradigm shift in government thinking on urea. This option will only be seriously considered if self-sufficiency in fertilizer production and food security are de-linked in policy discussions. So far, on the basis of interviews, we find little evidence that this has taken place and thus the option finds little support among a majority of stakeholders involved in the policy process.

The policy option involving partial decontrol with a single producer price and no de-canalization of import has been suggested before (HPRC 1998). In order to maintain existing levels of self-sufficiency, this option requires that most domestic urea units convert to natural gas in order to prevent closure. The biggest obstacle to adopting this policy option is the inadequate supply of natural gas. In view of the existing gap in supply and demand of natural gas, the fertilizer industry and the MoCF are strongly opposed to this option. Fearing a disruption of urea under this option, the MoA also opposes it.

The option of continuing with the existing group-based pricing is being considered most actively. While it will not face much political opposition, it will not relieve the fiscal stress the fertilizer subsidy is contributing to at present. The MoF and the Planning Commission, along with international institutions, the media and several economists are opposed to this option while the MoCF, the MoA and the fertilizer industry are in favor.

The option of locating units abroad near feedstock sources has been tried successfully in the setting up of a unit in Oman. Most stakeholders support this option. However,

representatives of domestic fertilizer industry are doubtful that under current market conditions surrounding natural gas, this case can be replicated.

7.2.2 Policy options to increase the farmgate price of fertilizer

Analysis of one-time increases in urea prices suggest that yearly increases in urea prices will face substantial opposition in the Parliament. However, in the past, when support prices were increased, on a majority of occasions, a rise in the urea price was successfully implemented. When proposed hikes in prices were reversed, the resistance came from within the government, either from coalition members or the ruling party or both. The group of stakeholders that actively advocate an increase in farmgate price comprises the fertilizer industry and most ministries.

Opposition to targeting of subsidies to small and marginal farmers comes from medium and large farmers as well as from bureaucrats in the MoA and MoCF. While the idea has been suggested by several sources including members of the Planning Commission and bureaucrats in the MoF, the proponents of this policy do not articulate their position with the same confidence as do the opponents.

Part III: The Political Economy of Electricity Supply to Agriculture

8 Electricity Supply to Agriculture in Andhra Pradesh and Punjab: An Overview

While fertilizer policy is a national subject, electricity policy is a joint responsibility of the central government and the states. This chapter provides an overview of the two states that have been selected for the empirical analysis of electricity supply to agriculture.

8.1 Profile of the Two States

Table 5 displays some basic socio-economic and agricultural data on Andhra Pradesh and Punjab. Andhra Pradesh is the fourth largest state in India by area, and the fifth largest by population. It occupies a middle ground in terms of economic performance and social indicators. Its growth rates are lower than that of the neighboring Indian states of Karnataka and Tamil Nadu (World Bank, 2003b). However, some social indicators are comparatively favorable. The poverty rate in Andhra Pradesh is lower than the All-India average, and the gender ratio is above average.

Punjab is India's most developed state with the lowest poverty rate. Its development has been driven by the Green Revolution, but the state experienced a considerable decline of its agricultural and overall growth rate, partly associated with a decade of social unrest (see Chapter 5). In spite of its relatively high income level, Punjab scores comparatively low on social indicators, such as the gender ratio.

Table 6 displays the distribution of households that use electric pumps and the area they use by state. In Andhra Pradesh, the percentage of small and marginal farmers using electric pumps and of the area they cultivate is close the All-India average, whereas in Punjab, the percentage of medium and large farmers who own pumps and the area they cultivate are above the All-India average.

As Table 5 shows, the size of the average land holdings in Punjab is much higher than the All-India average, and the average income of the farm households is more than double the All-India average. In 2002/03, Punjab, which covers only 1.5 % of India's geographical area, produced about 22 % of the country's wheat, 12 % of the rice and 17 % of the cotton (DOAP, 2006).

Table 5: Socio-Economic and Agricultural Data of Andhra Pradesh and Punjab

	Andhra Pradesh	Punjab	All India
Total population (million) (2000/01)	75.7	24.35	1,028.61
Population density (persons/km ²)	277	313	313
Population below poverty line (percent)	15.8%	6.2%	26.1%
Gross State Domestic Product (GSDP) (crores) 2003/04	99,932	44,862	1,318,362
Share of agricultural sector in GSDP (2003/04)	24.7%	38.7%	21.5%
Government-debt to GSDP rate (2000/01)	25.62%	40.66%	30.69%
Growth rate of GSDP (%) (1993/94 to 2000/01)	5.31%	4.96%	6.13%
Growth rate of agricultural sector (%) (2003/04)		6.29%	9.1 %
Gender ratio (women per 1,000 men)	978	865	933
Households with access to electricity (%)	60 %	89 %	44 %
Average size of land holding (ha)	1.25	4.03	1.39
Annual total income of farm households (Rs)	19,608	59,520	25,380
Annual cultivation income (Rs)	8,916	33,864	11,628
Indebtedness of farmers (percent)	82.0%	65.4%	48.6%
Indebtedness of farmers, amount (Rs)	23,965	41,576	12,585
Average paddy yield (kg/ha)	3,011	3,584	

Sources: Economic Survey 2003/04; Rao and Dev (2003: 43, 44, 141); World Bank (2004a), World Bank (2004b), www.punjab.gov.nic.in.

8.2 Electricity Supply to Agriculture and Groundwater Use

Figure 5 shows access to groundwater irrigation and electricity tariffs by state. The access data are based on NSS data (55th round), which collected data on groundwater irrigation. The electricity tariffs (electricity price paid by the farmers) is, derived from Planning Commission data for the same year. In the diagram, the states are ordered according to the level of electricity tariff. The lower the tariff, the higher is the subsidy per electricity unit that a state provides to agriculture. Regarding access, the diagram includes both households that own pumps and households that buy irrigation water from pump owners. The diagram also indicates to which extent farmers own diesel pumps. The diagram shows that with the exception of Haryana, states that have larger percentages of farmers who use groundwater tend to subsidize electricity more.²⁴ The diagram also shows that the percentage of farmers who purchase groundwater from well owners is considerable. Depending on the modalities of the groundwater market,

²⁴ Note that this is an interesting deviation from the “classical” argument that agricultural price subsidies tend to be higher where farmers constitute a small group and are hence, better able to overcome collective action problems.

these farmers also benefit from the electricity subsidies, hence they should not be ignored in any analysis of the political economy of electricity supply to agriculture.

The NSS survey also asked whether farmers experience problems regarding inadequate supply of electricity or groundwater, which prevent them from using pumps. The results are displayed in Figure 5. The percentage of farmers experiencing problems was highest in Andhra Pradesh both for electricity and groundwater.

Table 6: Distribution of Households Using Electric Pumps and Area Irrigated, 1998

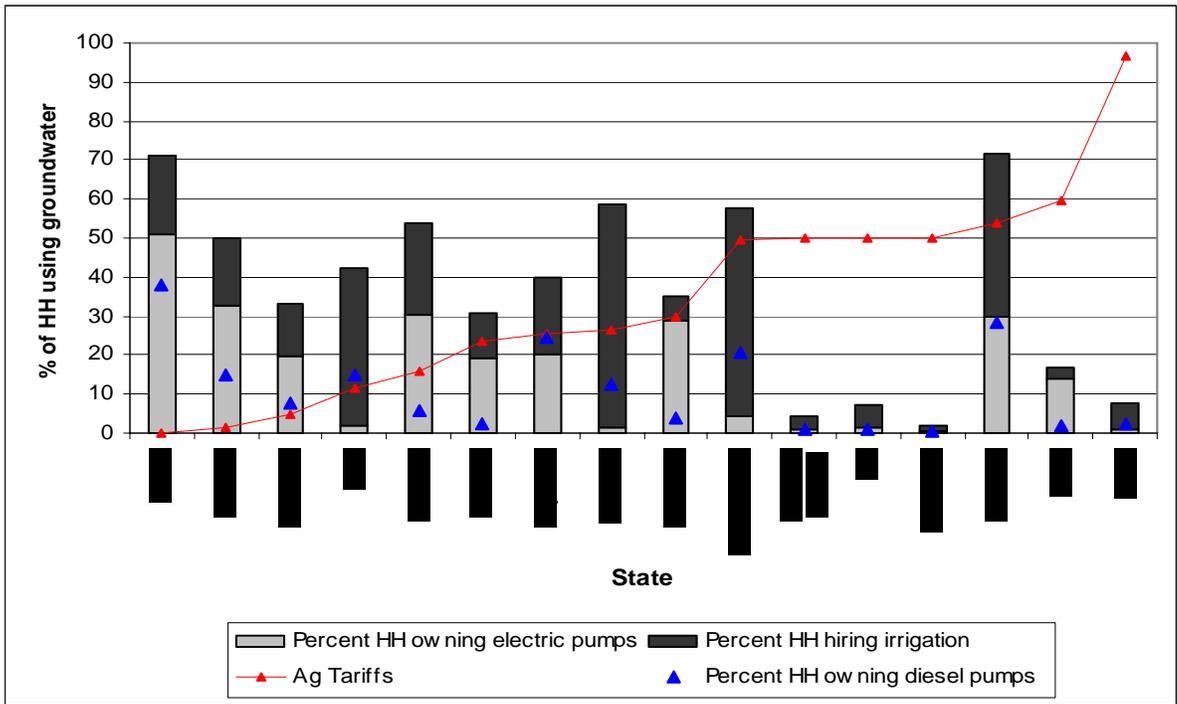
States	Households using electric pumps		Share of area irrigated with pumps		Total area irrigated with electric pumps million (ha)
	Small and Marginal (%)	Medium and Large (%)	Small and Marginal (%)	Medium and Large (%)	
Andhra Pradesh	66.14	33.86	32.49	67.52	3.13
Assam	90.05	9.95	91.7	8.83	0.02
Bihar	79.62	20.38	32.62	67.38	0.6
Gujarat	63.83	36.17	29.1	70.9	2.64
Haryana	55.33	44.68	24.73	75.27	2.1
Karnataka	44.4	55.6	18.6	81.4	2.06
Kerala	93.31	6.69	61.14	38.86	0.21
Madhya Pradesh	46.4	53.6	16.09	83.91	7.25
Maharashtra	49.79	50.21	20.6	79.4	4.09
Orissa	80.14	19.86	56.03	43.97	0.09
Punjab	54.78	45.22	21.38	78.62	3.3
Rajasthan	51.24	48.76	20.2	79.8	4.72
Tamil Nadu	81.59	18.41	51.73	48.28	1.71
Uttar Pradesh	83.58	16.42	51.79	48.21	6.19
West Bengal	92.93	7.07	68.75	31.25	0.51
All India	66.11	33.9	29.03	70.97	38.71

Notes:

- Marginal Farmers own less than 1 ha of land and small farmers own 1 to less than 2 ha of land.
- Medium Farmers own 2 to less than 4 ha of land and large farmers own 4 or more hectares of land.

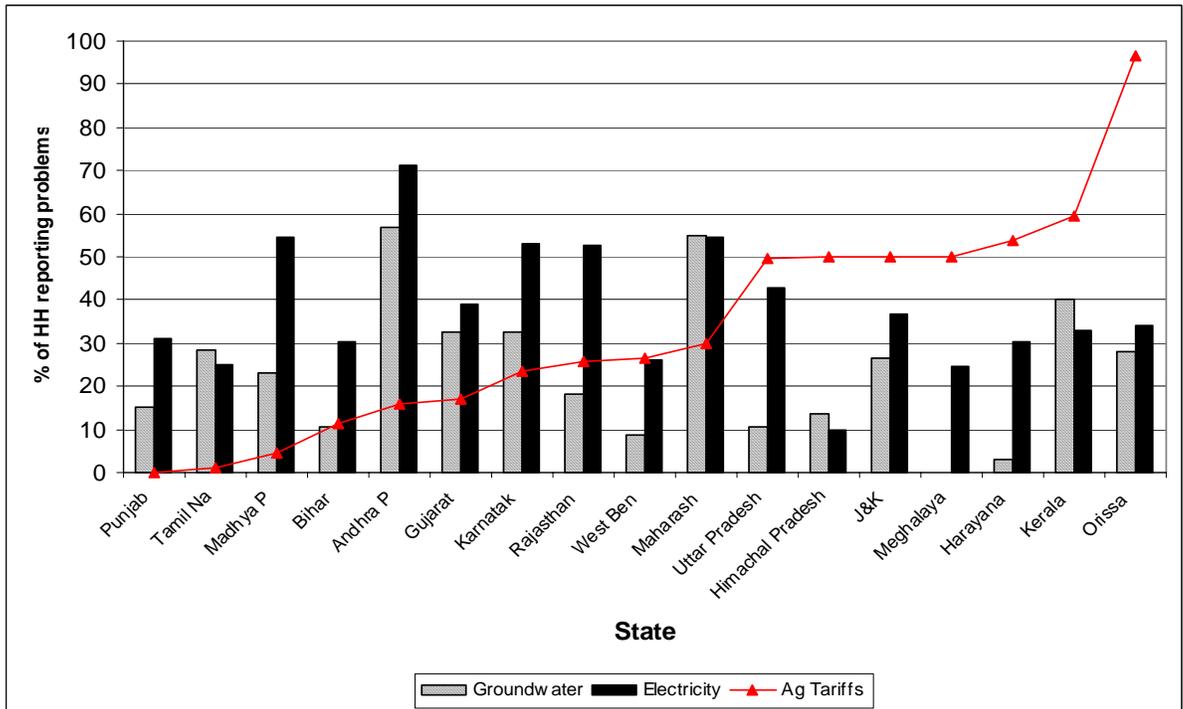
Source: World Bank (2004c) using data from NSS 54th Round 1998.

Figure 5: Access to groundwater and electricity price by state



Source: NSS 55th Round (1999-2000); Yearbooks of the Planning Commission

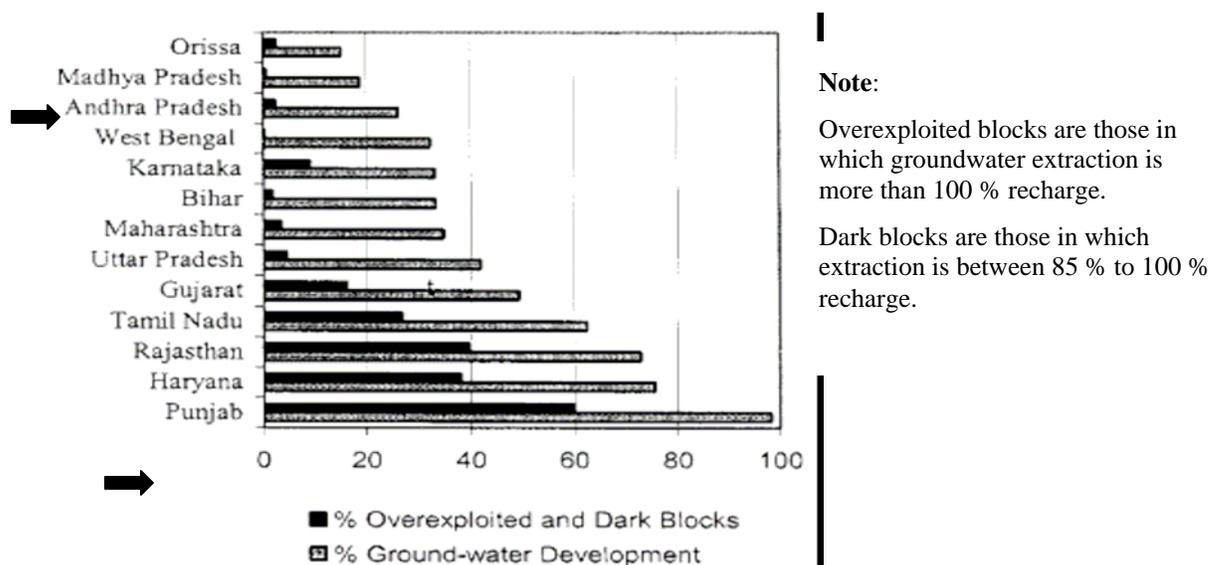
Figure 6: Farmers reporting inadequate access to electricity and groundwater by state



Source: NSS 55th Round (1999-2000)

Figure 7 displays the level of groundwater development and groundwater overexploitation in selected states for 1998, based on data of the Central Groundwater Board.²⁵ Punjab had already developed almost 100 % of its groundwater resources then, whereas the corresponding figure for Andhra Pradesh was less than 30 %. Punjab faces serious problems of overexploitation of groundwater. In Andhra Pradesh, the problem the problem is also severe. According to the data of the Central Groundwater Board, it has not yet reached the same dimension as in Punjab. However, as Figure 6 shows, the percentage of farmers reporting problems regarding groundwater availability is higher in Andhra Pradesh than in Punjab.

Figure 7: Status of Groundwater Exploitation and Development in Selected States (1998)



Source: World Bank (2004c), based on Central Groundwater Board

8.3 Magnitude and Distribution of Electricity Subsidies to Agriculture

Table 7 displays the magnitude of the electricity subsidies to the agricultural sector (calculated by a forthcoming IFPRI study) in comparison other categories of public spending. As

²⁵ These were the latest officially available data to the authors. The Central Groundwater Board is in the process of producing a new report, so that updated figures should become available soon.

Table 7 shows, both Andhra Pradesh and Punjab are spending more on this subsidy than they spend on health or general education. In relative terms (as percent of total state expenditure), the subsidy in Punjab is more than double as high as in Andhra Pradesh. Moreover, Andhra Pradesh invests a considerably larger share of the state budget on surface irrigation.

Table 7: Electricity Subsidy in Comparison (2002/03)

	Andhra Pradesh	Punjab
Total amount of electricity subsidy to agriculture (Mio Rs.)	29,312	14,604
Total state expenditure (Mio. Rs.)	831,508	198,307
Electricity subsidy to agriculture as percent of total state expenditure (%)	3.53%	7.36%
Budget share for irrigation and flood control (%)	17.88%	1.76%
Budget share for health (%)	2.64%	3.27%
Share of general education (%)	2.88%	2.42%

Sources: Vashishtha et.al. (2006); Statistical Abstract Andhra Pradesh 2005; Statistical Abstract Punjab, 2004.

Table 8 and Table 9 specify the distribution of the electricity subsidy by farm size class. Expectedly, larger farmers benefit more from the subsidy than smaller farmers. As the comparison between Table 8 and Table 9 shows, this effect is more pronounced in Punjab. Interpreting the tables, one has to keep in mind that the situation has changed since then due to the introduction of the free power policy, as will be discussed in more detail below. Moreover, these figures only take pump owners into account.

Table 8: Distribution of Electricity Subsidy by Farm Size in Andhra Pradesh (2003/04)

Farm Size Group	Subsidy per hectare (Rs.)	Subsidy per holding (Rs.)	Distribution of the electricity subsidy (%)
Marginal (<1 ha)	2,370	1,517	0.9
Small (1-2 ha)	2,771	4,020	4.2
Semi-medium (2-4 ha)	3,937	10,677	21.9
Medium(4-10 ha)	4,390	25,406	46.9
Large(>10 ha)	3,947	60,774	26.1
All Groups	4,039	16,696	100.0

Source: Vashishtha et.al. (2006)

Table 9: Distribution of Electricity Subsidy by Farm Size in Andhra Pradesh (2000/01)

Farm Size Group	Distribution of farms (%)	Distribution of pumpsets (%)	Distribution of operated area (%)	Subsidy per holding (Rs)	Subsidy per hectare (Rs.)	Distribution of the electricity subsidy (%)
Marginal (<1ha)	60.90	39.00	21.56	687	1,555	16.34
Small (1-2ha)	21.83	28.74	24.76	2,595	1,833	22.12
Semi -Medium (2-4ha)	12.35	18.26	26.36	5,207	1,954	25.10
Medium and Large (>4ha)	4.92	14.00	27.33	18,980	2,735	36.43
All Groups	100	100	100	2,561	2,051	100

Source: Vashishtha et.al. (2006)

8.4 Power Sector: Status of Reform and Performance

The national Electricity Act of 2003 provides the framework for power sector reform at the state level. Box A-1 in the Annex 1 summarizes some major features of the Act. Among other provisions, the Act requires the establishment of an Independent Electricity Regulatory Commission, and the separation of transmission activity from the State Electricity Board (a minimum unbundling requirement). Table 10 below compares the current status of the reforms in Punjab and Andhra Pradesh.

Table 10: Status of Electricity Reform Process in Punjab and Andhra Pradesh

Item/States	Punjab	Andhra Pradesh
Reform Bill Passed		√ April 1998
Setting up of an Independent Electricity Regulatory Commission	√ Notification 1999 √ Members appointed 2000	√ 1999
Unbundling of the State Electricity Board	Extension taken up to Dec.2005 (further action yet to be taken)	√1999
No. of Tariff Orders Passed by the Electricity Regulatory Commission till 2005-06	4	6
Metering Achieved (%)		
Feeder	100	100
Consumer	84	91

Notes: √ denotes that the item was implemented.

Source: Websites of the State Regulatory Commissions;

As Table 10 indicates, Andhra Pradesh is more advanced in its reform process, especially since it has unbundled the State Electricity Board, lists some key performance indicators of the power sector. According to the performance rating by ICRA & CRISIL, Andhra Pradesh ranks 1 and Punjab ranks 13 out of the 29 states included in the ranking. Punjab reached, however, only half of the total score of Andhra Pradesh, indicating that Punjab's rank in the middle of the spectrum is due to the rather low performance of the majority of states. In terms of the plant load factor, an indicator of technical efficiency in power generation, both Andhra Pradesh and Punjab rank above the All-India average. In terms of transmission and distribution losses, both states are also better than the All-India average, which is, however, rather dismal by international standards, considering that one third the entire power produced is lost or stolen. Unfortunately, data on the performance of the electricity supply to agriculture, such as average hours of supply and quality of supply, are difficult to obtain. Hence, the figures in Table 11 represent performance from an investor's perspective, not necessarily from the perspective of the farmers or the rural poor.

Table 11: Performance of the Power Sector in Punjab and Andhra Pradesh

	Source	Andhra Pradesh	Punjab	All India Average
Rank in overall economic performance (out of 29 states)	CRISL 2006	Rank 1	Rank 13	
Total score	CRISIL 2006	55.81	27.69	
Transmission & Distribution losses (%)	Central Electricity Authority Website	27.7%	25.96%	32.53 %
Plant load factor	Punjab Government for Punjab and India; CRISIL for Andhra Pradesh	88%	80.2%	69%

Sources: ICRA & CRISIL (2005), Central Electricity Authority website (www.cea.nic.in) and Punjab Government Website (punjabgov.nic.in)

8.5 Summary

As the preceding sections show, Punjab and Andhra Pradesh represent states that differ with regard to economic performance on the one hand, and reform-orientation on the other hand. In both states, more than half of the small and marginal farmers use electric pumps for groundwater irrigation. Both states have decided to maintain comparatively high levels of electricity subsidies to the agricultural sector, in spite of the fiscal burden and the fact that this measure benefits the larger farmers disproportionately, an effect that is more pronounced in Punjab. Andhra Pradesh has

managed to engage rather successfully in a reform of its power sector, emerging as Number 1 according to an investment-oriented performance ranking, while Punjab has chosen a slower reform path. Both states face serious problems of groundwater depletion, but on an aggregate scale this problem is more pronounced in Punjab. The next section will outline the policy processes that have led to these outcomes.

9 Electricity Supply to Agriculture in Andhra Pradesh and Punjab: Evolution and Reform Initiatives

This chapter describes the political processes related to the electricity supply to agriculture, focusing on the policies related to electricity subsidies, power sector reforms, and irrigation and groundwater management policies.

9.1 Andhra Pradesh

9.1.1 Overview

To understand the evolution of the policies related to the electricity supply to agriculture in Andhra Pradesh, it is useful to consider three major phases:

- (1) the period between 1977 and 1991, in which electricity subsidies and the flat rate tariff became established as part of a welfare-oriented policy agenda;
- (2) the period between 1991 and 2004, in which efforts were made to reduce the electricity subsidies as part of an economic reform agenda; and
- (3) the period since 2004, in which the government introduced free electricity, while continuing the reforms in the power sector.

The major policy developments, which are analyzed below in more detail, can be summarized as follows: Electricity subsidies, and—importantly—the flat rate tariff, were first offered as an election promise by the Congress Party in 1977, against the background of declining “terms of trade” in agriculture, which led to the emergence of a strong farmers’ movement. Subsequently, electricity subsidies became an important component of the “pro-peasant” policies of Chief Minister N.T. Rama Rao (NTR), a cine-idol who created the Telugu Desam Party (TDP), the first regional party in Andhra Pradesh that was able to challenge Congress rule. NTR’s successor Chandrababu Naidu, tried to reduce the electricity subsidies to agriculture as part of his well-publicized agenda of economic and governance reforms, but he was confronted with unexpectedly strong political protest on that matter. Nevertheless, he managed to get the power sector on a successful reform path. He also introduced far-

reaching legislation to conserve groundwater resources and to promote participatory irrigation management. In the 2004 elections, Congress Party candidate Y.S. Rajasekhara Reddy (YSR) promoted free electricity policy in his efforts to win rural voters, thereby capitalizing on the “urban bias” image that Naidu had come to acquire. In spite of the free-power policy that YSR implemented immediately after being elected, the power sector has remained on a successful reform path under his rule. However, as Chapter 6 will show in more detail, the specific problems inherent in the electricity supply to agriculture have remained to a large extent unresolved.

9.1.2 1977-1991: Emergence and Establishment of Electricity Subsidies and Flat Rate Tariffs

According to Dubash and Rajan (2001: 3369), Andhra Pradesh may have been the first state in India, where electricity subsidies and a flat rate tariff were used as a political tool.²⁶ In its efforts to get re-elected in 1977 after the tumultuous time of Emergency, the Congress Party offered a flat-rate tariff and electricity subsidies to farmers as an election promise. Electricity subsidies became even more prominent in the elections of 1983, the first elections in Andhra Pradesh in which a regional party was able to challenge Congress rule in the state. While some other states had already experienced the emergence of regional parties the 1960s, such a party did not emerge in Andhra Pradesh until 1982, when N T Rama Rao (NTR) formed the Telugu Desam Party (TDP). The party came to power in a record time of just nine months after its creation. NTR challenged the Congress party as “pro-merchant” and “anti-peasant,” accusing it of the failure to guarantee remunerative prices to farmers and to supply electricity at subsidized rates. Misrule, corruption, inefficiency and rampant factionalism were other criticisms that TDP launched against Congress. Against this background, TDP adopted a manifesto for the 1983 elections that has been described as “a strange mix of social democracy and pro-market philosophy” (Suri, 2004: 1486). The manifesto combined (a) elements that are nowadays referred to as “good governance”, such as a clean, corruption-free and efficient government and downsizing of the state; (b) liberalization policies aiming at industrial development, such as the removal of unnecessary restrictions on industrialists (deregulation) and efforts to attract capital from outside the state; and (c) protectionist policies to promote “pro-peasant” agricultural development and a range of welfare policies.

Unexpected by the Congress Party, which had not taken NTR very seriously, he won the 1983 elections. In 1984, the Congress Party used the governor to pull down NTR’s

²⁶ According to another source (Singh, 2005:1), the idea of the flat-rate tariffs was first proposed in Punjab (see below).

government, but finally re-instated him in face of an angry, but peaceful mass agitation. This was, in fact, the only such instance in Indian political history (Suri, 2004: 1487). During NTR's rule from 1983 to 1989, TDP implemented its election promise of electricity subsidies, along with a range of social policies such as mid-day meals for school children, and construction of *pucca* houses for the poor and backward communities (Suri, 2004). Most notably, TDP introduced the famous Rs. 2 per kilo of rice scheme. These policies have been widely referred to as "populist". As further discussed in Section 6.2.1, the use of this term is problematic (c.f. also Lal's (2006) distinction between "legitimate" and "distorted" populism).

The emergence of electricity subsidies in Andhra Pradesh and other states in the late 1970s has to be seen in the context of the Green Revolution that started in the mid 1960s and debate about declining "terms of trade" that emerged in the 1970s. The provision of surface water irrigation and electricity for groundwater irrigation was an essential condition for the Green Revolution. When electricity connections for pump sets were first introduced, they were metered and farmers had to pay a volumetric price. To what extent the electricity supply to agriculture was subsidized from the beginning is difficult to reconstruct in view of various measurement challenges (e.g., the problem to value off-peak power supply correctly). In any case, subsidies in support the Green Revolution were part of a strategy to achieve the national goal of food self-sufficiency. As a political strategy to win farmers' votes, the question of subsidies became important in the 1970s. As studies (e.g., Tyagi, 1987) showed, the net barter terms of trade for agriculture declined during the 1970s, as the prices paid by the agricultural sector increased at a faster rate than the prices received. This factor contributed to the emergence of a farmers' movement that demanded subsidies as compensation, especially in regions that had initially benefited from the Green Revolution (see, e.g., Gill, 2000; Srinivasulu, 1999). In Andhra Pradesh, various crop-specific farmers' organizations developed in the 1970s. For example, the Andhra Pradesh Sugarcane Grower Association was founded in 1973/74 and the Andhra Pradesh Cotton Growers Association in 1976/78. Led mostly by educated rural youth from farm families, these organizations focused on economic issues, especially more remunerative prices (Baba et al., 199: 49-50).

To understand the introduction of electricity subsidies in Andhra Pradesh, the development in neighboring Tamil Nadu is particularly relevant. In Tamil Nadu, electricity subsidies were at the center of a large and violent agitation by the Tamil Nadu Agriculturists Association in the late 1970s. The Association was mostly led by large-scale farmers who demanded better "terms of trade". The chief minister responded first by ordering the police to fire on the farmers, but later he introduced a

progressive tariff structure that made electricity cheaper, even free, to small-scale farmers. According to the information collected for this study, this was the first instance in which *free* electricity was introduced in India.

The electoral promise of a flat rate tariffs by the Congress Party in Andhra Pradesh in 1977 (see above) may have had a demonstration effect, which also supported this policy decision (Dubash and Rajan, 2001). According to Iyer (2006, personal communication), the Tamil Nadu Agriculturalists Association had never demanded “free” electricity, neither had they demanded special concessions to the small farmers. Tamil Nadu’s chief minister, M.G. Ramachandran (MGR), however, adopted this policy with the intention to split the farmers’ movement, while at the same time “playing the card of equity.” (Iyer, 2006, personal communication). As in Andhra Pradesh, electricity subsidies in Tamil Nadu were part of a wider set of “populist” welfare policies introduced by MGR. As Suri (2004: 1486) points out, MGR, also a former cine-idol who had become the leader of a regional party, was in many ways a role model for NTR in Andhra Pradesh.

The introduction of electricity subsidies and the abolishment of metering was, however, not limited to these two states and their “populist” leaders. As Dubash and Rajan (2001: 3369) observe:

“Subsequently, political leaders in Maharashtra, Karnataka and elsewhere began to view the entitlement per se as a remarkably effective political device, in part because of the growing political power of backward rural communities and the rise of a middle-class farmers’ movement. In many states, a flat-rate tariff, rather than free electricity, was offered, but in either case, existing meters were no longer monitored or were simply removed and returned to the SEBs. This was driven in some measure by outright opposition to metering but also by the high transactional costs of such non-remunerative monitoring and meter installations for new connections.”

9.1.3 1989 to 2004: Efforts to reduce electricity subsidies and reform the power sector

1989 to 2004

In spite of the welfare and “populist” policies that NTR’s government implemented at a large scale between 1983 and 1989, the party lost the 1989 elections to the Congress Party. After 1991, the Congress Party, which then ruled both at the Center and in the state, started to engage in economic liberalization policies. Even though the TDP manifesto of 1983 had already called for some liberalization and deregulation policies (see Section 5.1.2), NTR launched a major attack on the reform policies of the Congress Party at both the center and the state level. In the election campaigns for the

1994 elections, NTR promised to restore the Rs 2 per kilo of rice scheme and to prohibit liquor (a measure especially appealing to women, who had agitated for this measure for years). Electricity to farmers at subsidized rates was an important element in NTR's election campaign, too.²⁷ Prime Minister P.V. Narasimha Rao played a major role in the Congress Party's election campaign of his home state. Contrasting "development" with "populist welfare", he argued that development would suffer if NTR's election promises were implemented (Suri, 2004: 1486).

Eventually, NTR's campaign had more appeal to the voters, and he won the 1994 elections. However, once elected, he immediately introduced some of the liberalization policies he had attacked during the election campaign. This strategy is quite in line with Lal's (2006) observation quoted above that politicians use "populist" slogans before elections, and become reform politicians after the elections. In the power sector, NTR's government promoted Independent Power Producers (IPPs), which were characteristic of the first phase of power-sector reforms.

TDP rule under Chandrababu Naidu 1995-1999

The liberalization reforms of TDP gained momentum when NTR's younger son-in-law, Chandrababu Naidu, replaced him in office in 1995, in what has been described a "palace coup" within in the party. While the leaders of this "coup" justified their action with the massive influence that NTR had permitted his wife to play in public affairs, the event remains a paradox in the state politics of Andhra Pradesh, considering the massive electoral victory that NTR had achieved just a year before the "coup" (Suri, 2004).²⁸

Though TDP had won the 1994 elections on an anti-liberalization ticket, Chandrababu Naidu emerged as one of India's most outspoken and internationally acclaimed champions of liberalization and "good governance" reforms. Different arguments have been advanced to account for this paradigm shift in the TDP: Naidu's personality representing a different generation policy-makers, the efforts of TDP to actively

²⁷ NTR's electoral promises were associated with a strongly "populist" rhetoric. He frequently used formulations such as "Society is my temple and people are my god." "I am waging a war for the welfare of the common man." Such statements fitted well with his image as cine-idol, especially since he concentrated on the divine roles of Rama and Krishna. As Suri (2004: 1486) comments: "In 1989, he declared himself "rajarsi" (philosopher-king) and began to wear the robes of a sanyasi. Really, there was some kind of divine madness in his thinking and political practice."

²⁸ Unlike in 1984, when the central government removed NTR from office, there was no widespread popular protest against his removal from power, in spite of NTR's efforts to organize it. According to Suri (2004: 1484), several reasons may account for this fact: the image of the event as a "family affair", the rise of an elite that increasingly considered NTR's populist welfare schemes as unproductive, and dissatisfaction of many party leaders with NTR's autocratic leadership style.

disassociate itself from NTR's policy agenda, style and symbols after his replacement (Srinivasulu, 1999: 211), and an attempt to sail with the times (Balagopal, 1999; quoted in Suri, 2004: 1486). Lal's (2006) argument of "speaking to two different audiences" (see above) may also contribute to explaining this change in TDP politics. Moreover, fiscal constraints and other external factors may have promoted the reforms, as was the case at the central level.

In pursuing his reform agenda, Naidu's TDP-led government benefited from a favorable non-Congress government at the central level. Unlike other reform politicians (see Jenkins, 1999, quoted above), Naidu did not pursue his reforms in a stealthy manner. Moreover, unlike other states (see Mahalingam, 2004, quoted above), Andhra Pradesh did engage in the unpopular "second phase" of power sector reforms under his rule. The power sector reform in Andhra Pradesh process had started with a high-level committee report in 1996. In support of the recommended reforms, the Andhra Pradesh State Electricity Board (APSEB) made efforts to reach out to the public, e.g., by distributing various bulletins in English and Telugu, and by distributing a film to reach illiterate audiences (World Bank, 2003b). APSEB also managed to successfully negotiate with all but one labor union. As a consequence, 90% of the more than 70,000 electricity sector employees could be brought on board to the reform process. In 1998, the AP Electricity Reform Act was passed. In February of the election year 1999, APSEB was restructured into two independent corporations (AP Transco for transmission/distribution, and AP Genco for generation), and in March 1999, the independent AP Energy Regulatory Commission (APEREC) was formed. In the process to reform the power sector, the Naidu government also took unpopular measures, such as increasing electricity prices to all sectors. Resistance from the farming community took violent forms. In 1997, the response to a spontaneous farmers' uprising in the Coastal Belt was police gunfire, in which three farmers' lost their lives (Srinivasulu, 1999: 222).

Apart from pursuing liberalization reforms, the Naidu government also took measures that have been classified as "new populism in the age of neo-liberalism" (Krishna Reddy, 2002). In 1997, the TDP government launched the *Janmabhoomi* ("motherland") program, which aimed at promoting a wide range of development activities focusing on citizen participation and accountable public administration. It has widely been criticized as a "government sponsored 'grassroots movement'" (Srinivasulu, 1999: 222) and as an effort to circumvent the elected local government (*Panchayati Raj*) institutions. Similar criticisms have been launched against the government's irrigation policy. In 1997, the "Andhra Pradesh Farmers Management of Irrigation Systems (APFMIS) Act" was passed, a landmark law for participatory

irrigation policy, which gave farmers' organizations full authority over the management of canal infrastructure at the minor (secondary) level and below. In July 1997, the government started the first phase of irrigation transfer by creating over 10,000 water user associations.

1999 Elections

In what can be seen as an interesting reversal of the roles assumed in the 1994 elections, the Congress Party pursued a "populist agenda" in the 1999 elections campaign, whereas TDP continued to pursue its pro-reform agenda. Most notably, the Congress party made an election promise to provide free electricity to farmers. Arguing that "free power is no power", Naidu defended his reform course, which explicitly included electricity charges. As can be seen from the above account, the state was right in the middle of the power sector reform process at that time. Still, during the months prior to the elections, the Naidu government did introduce a number of "populist" schemes, which the opposition tried to dismiss as "scheme gimmicks". The schemes included programs aimed at backward castes, dalits, tribal people, minorities, women, the handicapped and other disadvantaged sections of the society. The TDP won the 1999 elections, and Naidu interpreted this victory as a popular approval of his reform policies.

TDP rule under Chandrababu Naidu 1999 - 2004

Based on the power sector reform steps taken since 1996 (see above), the TDP-BJP coalition government launched a power sector reform program in 1999, which envisaged the full privatization of the electricity distribution until 2005. To support the implementation of the reforms, the government requested a loan from the World Bank (using the instrument of multi-phased adaptable program lending). A first project, involving a \$210m loan, was launched in 1999 (World Bank, 2004d). As a consequence of the government's decision to reduce the subsidy to the power sector, the newly created Andhra Pradesh Electricity Regulatory Commission (APERC) had the task to approve a tariff hike. APERC first convened meetings in the three largest cities to discuss a "philosophy paper" on tariff policy. In a case study case on participation in policy reform by the World Bank's Participation and Civic Engagement Team (World Bank, 2003b: 5), the meetings were described as follows:

"The nature of the meetings, however, did not lead to a constructive exchange of views on the problems and how to resolve them. Instead, an unwieldy total of over 300 interested participants gathered in each city. Farmers, in particular, dominated the discussions, drowning out other voices and flatly opposing a tariff increase."

In April 2000, after announcing the proposed tariff increases, APERC conducted a forum with approximately 80 organizations, and a four-day consultation with 26 organizations, including agriculture groups, domestic household consumers, businesses, large-scale industry, railways, and others. According to the case study (World Bank, 2003b: 5):

“This time, there was a substantive exchange of views with groups putting forward proposals for changes in the system of billing, using competing arguments of equity and fairness. There was a recognition by many users that the mounting losses in the system needed to be addressed but many remained unconvinced that all cost-saving measures had been taken to minimize the need for a tariff increase. Farmers continued to hotly contest estimates of unmetered agricultural use. The press was not given access to the proceedings, presumably due to lack of space in APERC premises, and was provided summary information in the evening.”

In July 2000, APERC issued a tariff order, increasing average tariffs by 15 percent, agricultural tariffs by 50 percent and residential tariffs by 69-300 percent (World Bank, 2004d). The tariff structure also included incentives for farmers to switch from a flat rate to metering, which did create a steady stream of applications (World Bank, 2003b). APERC argued that it had altered the tariff structure to address several concerns expressed in the consultations, and the government pointed out that more than 60% of the households (with usage below a certain amount) were not affected, but this was not sufficient to prevent the massive public protest fuelled by the announcement of the tariff hike. The opposition parties used the opportunity to help organize the protest, which included hunger strikes, demonstrations, and assembly walkouts. Eventually, the demonstrations turned violent and three activists of the Communist Party CPI (M) were killed in police fire on August 28, 2000.²⁹ While the government did not roll back the tariffs, it made no major efforts for further cost-recovery in subsequent years (World Bank, 2004d). Otherwise, however, the government continued with its power sector reform program, which included the creation of four distribution companies (DISCOMS), institutional capacity building and other measures to increase the efficiency of the sector.

In the field of water and irrigation policy, the “Andhra Pradesh Water, Land and Trees Act” (AP WALT Act) was passed in 2002, which has been described as “one of the most comprehensive pieces of legislation on water conservation and green cover implemented by any state” (EPW, 2002). Under this law, wells have to be registered

²⁹ See “Stir victims remembered” in *The Hindu*, Tuesday, Aug 29, 2006.

with a new authority that can prohibit groundwater pumping in certain areas, and even order closure of wells. This legislation followed the 'Neeru-Meeru' program created in 2000, an ambitious project to conserve water across 10 million acres of land in different climatic and geophysical zones. The program acknowledged the need to coordinate the conservation efforts of different government departments – forest, irrigation, rural development, horticulture, animal husbandry, mining and groundwater.

2004 Elections

After escaping an assassination attempt by the People's War Group naxalites, Naidu opted for an early election, hoping to capitalize on the “sympathy factor”. Consequently, the election campaign of TDP became strongly centered on him. As Srinivasulu (2004: 12) observes, Naidu facilitated this process by declaring the election a referendum of his nine-year rule. Accordingly, the TDP campaign focused on the reform agenda, next to law and order, and political stability. The Congress campaign, by contrast, focused on what had become widely accepted as the “crisis of the agrarian sector,” both in Andhra Pradesh, and in India at large (compare Suri, 2006). Two factors contributed to the prominence of this topic on the political agenda in Andhra Pradesh: the drought in 2002/2003, and the problem of farmers' suicides. The media, farmers' organizations and the Left parties sustained the debate on the issue.

Since a major focus of the campaigns for the 2004 elections was placed on agrarian distress, electricity supply to agriculture became an important topic. In view of the social unrest that the electricity tariff hikes of 2000 had caused, these hikes became an obvious issue for the election campaign. The Congress Party renewed its promise to provide free power to the farmers. As the analysis by Srinivasulu (2004) shows, this electoral promise carried much more weight for the 2004 elections than it had in the 1999 elections. Critical to this change was the *Praja Prasthana Padayatra* that opposition leader Y Rajasekhara Reddy (YSR) had undertaken in summer 2003. He covered 1,500 km on foot, which helped him to establish rapport with the rural poor, emerge as a charismatic leader of the Congress Party, boost the morale of the party, and create a self-image that was in stark contrast with that of Naidu (Srinivasulu, 2004). Naidu was known for calling himself the CEO of the state, carrying his laptop all the time, and traveling by plane. Guarded by heavy security, his possibilities to directly interact with the people were rather limited.

Naidu's government also received strong criticism from the left parties, which focused on issues such as the “surrender” of his party to the World Bank. The loan that the

Naidu government had taken to support the power sector reforms was described as a case in point. As Srinivasulu (2004: 24) notes, the World Bank also became a shorthand expression for various reforms of the Naidu government that the left criticized in their campaign.

The 2004 elections led to a major defeat of TDP. The number of TDP members in the Assembly dropped from 180 to 47, while Congress increased its members from 91 to 186 (Srinivasulu, 2004). It would require an analysis of election survey data to assess the relative importance of the power sector reforms and the election promise of free electricity as compared to the other factors in contributing to this outcome.³⁰ After nine years in power, the anti-incumbency factor certainly played a role as well.

9.2 2004 to 2006: Combining free electricity with power sector reforms

The first public act of the newly elected Chief Minister YSR, soon after taking the oath, was to fulfill his election promise and declare free electricity for all farmers. He also waived the electricity dues of the farmers and approved other relief measures. In November 2004, he declared that the government will continue free power supply to agriculture pump sets “till the farming by farmers becomes viable” (The Hindu, 11/11/2004). His government did, however, introduce some targeting of the electricity subsidy in 2005, by excluding approximately 5% of the farmers from the free power supply, based on criteria such as large holdings, having more than one pump set, and having a non-farm income. The government also promoted measures to save energy, by making the use of capacitors (energy-saving devices) for pump set owners compulsory. YSR announced that farmers who failed to install capacitors by March 2006 (a deadline that was later extended) would be deemed ineligible for the free power supply scheme (The Hindu, 04/11/2005). As a measure to save both water and electricity, the YSR government announced in 2005 that farmers would not be eligible for the free power scheme, if they grow paddy in the *rabi* season. In view of stiff protest by opposition parties and farmers’ organizations, the plan was, however, not implemented (see, e.g., Kurmanath, 2005). The government also reduced the hours of power supply to control the level of subsidies in view of the free electricity policy. Expectedly, the TDP criticized this reduction of supply (The Hindu, 28/02/2006). Still, the reduction of the hours of supply and the introduction of targeting received comparatively little publicity, suggesting that these measures may have been “stealthy” elements in the reform process (c.f. Jenkins, 1999).

³⁰ Unlike in the case of Punjab (see Section 5.2), the available election survey data for Andhra Pradesh do not include information on voters’ perceptions regarding free electricity.

While YSR's Congress-led government did not further pursue the privatization of the power sector, it has remained committed to reforms that improve its performance. Since the government has, so far, reimbursed the utilities for the electricity subsidy to agriculture, two major problems caused by the subsidies—the financial strain on the power utilities and the disadvantages of the respective cross-subsidization—were effectively removed. From the perspective of the utilities, this arrangement has the advantage of saving the transaction costs involved in billing the agricultural pump-set connections. In the public discourse, YSR emphasizes that power sector reform and free electricity are highly compatible. When the 2006 CRISIL rating was announced, according to which Andhra Pradesh again was rated first among all Indian states, *The Hindu* (14/06/2006) reported:

“Chief Minister Y.S. Rajasekhara Reddy on Tuesday hailed the CRISIL rating of State power utilities as `vindication' of his `path-breaking' initiative of providing free power to the agriculture sector as an input subsidy. According to an official release, Union Power Minister Sushil Kumar Shinde telephoned Dr. Reddy in the morning and congratulated him for securing the top rating in spite of the Government implementing the free power scheme.”

In the field of irrigation policy, the YSR government massively increased the investment in surface irrigation projects. In the budget of 2006/2007, 51% of the Plan Expenditure was allocated to irrigation projects (GoAP, 2006). At the time the budget was discussed in the State Assembly, the opposition, led by Chandrababu Naidu, launched a series of protests, including walk-outs, against alleged corruption related to irrigation projects. Regarding groundwater conservation, the YSR government pursued amendments to the AP WALT act in order to increase the monitoring of groundwater resources and to include bore wells for drinking water (*The Hindu*, 04/11/04).

9.3 Punjab

9.3.1 Overview

To understand the evolution of the policy processes related to electricity supply to agriculture in Punjab, it is useful to consider the following phases:

- 1) The period prior to 1984, in which a strong farmers' movement, the *Baratyia Kisan Union* (BKU), emerged, which demanded subsidized electricity;
- 2) the period from 1984-1997, which was characterized by social unrest, President's rule and an election boycott in 1992; and

- 3) the period since 1997, in which identity politics had declined and a “populist” policy agenda that included free electricity emerged.

The major developments in Punjab, which are further detailed below, can be summarized as follows: As in the case of Andhra Pradesh, electricity subsidies and a flat rate tariff became political issues in the first half of the 1980s, against the background of declining farm incomes that led to the emergence of a strong farmers’ movement. During the period from 1984 to 1992, civil unrest and identity politics dominated the political agenda, and farmers’ mobilization was not allowed. At the time of the 1997 elections, however, identity politics had declined and social and economic policies dominated the electoral campaigns. The Akali Dal-led government that came to power in 1997 introduced free electricity for agricultural producers. The Congress-led government that won the elections in 2002 first continued the free power policy, but then withdrew this policy before re-introducing it again in view of the 2007 elections. In spite of a Memorandum between the Government of Punjab and the Government of India on power sector reforms, actual progress has remained limited in this regard. Likewise, progress in developing policies for a more sustainable management of groundwater has been rather limited.

9.3.2 1966-1984: Emergence and establishment of electricity subsidies and flat rate tariffs

In its current form, Punjab was created through a reorganization in 1966 that made the Sikh community the majority in the state. Since then, political power in the state has always rotated between the Congress Party and coalitions led by the Akali Dal, the party representing the Sikhs. No ruling party was ever re-elected for a consecutive turn in Punjab (Verma, 2002). Unlike the TDP in Andhra Pradesh, the Akali Dal is one of the oldest regional parties. It was formed in 1920 and has since then been of crucial importance for the Sikh community in the assertion of their cultural and linguistic identity. The Green Revolution—which started in Punjab in 1966 with the first planting of high yielding varieties (HYVs) of wheat imported from Mexico—resulted in a change of the leadership of the Akali Dal. Until the 1950s, the Akali Dal leaders were upper caste, middle class Sikhs or urban background. Since the 1960s, the Akali leadership has been dominated by the Jat Sikhs, the numerically strong peasant caste that became economically empowered during the Green Revolution (Kumar, 2004: 1516).

As already discussed for the case of Andhra Pradesh above, the provision of electricity for groundwater irrigation was an important policy in support of the Green Revolution. Electric pump sets were metered when they were first introduced, and farmers paid a

price per volume. In the second half of the 1970s, the net income of the farmers from wheat production in Punjab declined considerably, which stimulated the emergence of a powerful farmers' movement, the Bhartiya Kisan Union (BKU).³¹ As the analysis by Gill (2000, 2004) showed, the BKU was led by better-off, enterprising and educated farmers. Unlike earlier farmers' movements in Punjab, BKU was not dependent on any political party, and it succeeded in mobilizing all sections of farmers, thus marginalizing the farmers' organizations led by the Communist Parties. The success of BKU was supported by several factors: All size classes of farmers had benefited from the Green Revolution and developed high expectations based on their initial experience. Moreover, they all shared a common interest regarding input and output prices. In addition, the majority come from the same caste, the Jat. (Gill, 2000: 360). The BKU had established the principle to be independent from political parties, although it always remained closer to the Akali Dal. Still, when the Akali government did not satisfy the farmers' demands, BKU chose not to support them in the 1980 elections, which indirectly benefited the Congress Party (Gill, 2004: 365). The failure of BKU leaders to adhere to the principle of political independence later led to the fragmentation of the BKU (Gill, 2004).

In view of the deteriorating price relations in the 1970s, one of the major demands of the BKU in the early 1980s was to link farm prices to an index of prices with the base year 1967/68 and to lower the prices for inputs, including fertilizer, diesel and electricity. BKU also demanded measures that are nowadays referred to as "good governance", such as checking of illegal extortions from the farmers by officials of revenue and cooperative departments and the State Electricity Board. In spite of its image as a "populist movement", BKU never started any agitation for special provisions related to poor farmers, agricultural workers or women (Gill, 2000: 366-67).

The electricity supply to agriculture played in fact an important role in the agitations of BKU in the early 1980s (Iyer, 2006, personal information). A decision in early 1983 to increase the electricity rates led BKU to launch a major agitation on January 20, 1983. BKU demanded the withdrawal of the increased electricity rates and formulated demands regarding better conditions for new connections and against restrictions on the use of electric motors for purposes other than irrigation. BKU started a move for the non-payment of the electricity bills to exercise pressure for a withdrawal of the tariff increase. Finally, an agreement was reached in 1984 that approved eight

³¹ The BKU is not limited to Punjab, there are also BKU units in the other states of the Green Revolution Belt of North-West India.

demands that the BKU had formulated regarding electricity supply, including a considerable reduction of connection charges and line service charges, and a commitment to establish electricity connections within three months. The recovery of electricity bills for tube wells was also postponed. The switch from metered connections to a flat rate (see footnote 26) had already proposed by the Punjab SEB at a high-level meeting in 1977, in spite of the concerns expressed at that time by the chairmen of other SEBs regarding the long-term effects of such a policy (Singh, 2005: 1).³²

The organizational capacity of the BKU in mobilizing farmers is obvious from the type of campaigns they were able to conduct in support of their demands. As Gill (2000: 368) reports:

“The outstanding example of culmination of this process has been a successful siege of Punjab Governor’s residence at Chandigarh between 12-18 March 1984 in which 50 to 60 thousand farmers almost took over the state capital. [...] Following this, the Union [BKU] almost took over the entire rural Punjab and entry of officials of the state Electricity Board and cooperative department, revenue staff and police was banned without the permission of BKU. Finally, the Union decided to block the movement of wheat outside the state from June 10, 1984.”

The campaign, which took place in an otherwise tumultuous political period, came to a sudden end on June 3, 1984, when the Central Government decided to bring Punjab under the control of the army and subsequently launched the military action at the Golden Temple of Amritsar (Operation Blue Star). These events were followed by a decade of militancy, in which the secessionist Khalistan movement state played a major role. With regard to irrigation policy, it is important to note that the dispute between Punjab and the Central government regarding the sharing of Punjab’s river waters with other states was an important factor in this conflict.

9.3.3 1984-1997: Militancy and identity politics

The period of militancy lasted until 1992. During this period, Punjab was under President’s rule, except for a brief interim period between 1985-87, when the Akali

³² According to Singh (2005:1): “It was at a high-level seminar in 1997, in which several chairmen of electricity boards participated, that the then chairman of the Punjab State Electricity Board presented his plan for doing away with metering of electricity for farmers and charging a flat rate based on the horse-power of pump-set installed. Several arguments against the proposal failed to convince the delegation from Punjab of the long-term dangers of such an approach. This started a countrywide trend where state after state indulged in irresponsible populism by first moving to a flat rate and then, in several cases, to zero tariffs power.”

Dal ruled (for the first time, without a coalition partner.) Farmers' mobilization was not allowed until the return of democracy in 1992. Still, the BKU managed to make its existence known, mainly through newspaper reports (Gill, 2000: 370). However, this period saw the split and the subsequent fragmentation of the BKU. The government made efforts to co-opt some BKU leaders, for example through membership in the State Electricity Board and other committees, an action that created jealousy among BKU leaders (Gill, 2000: 369). Moreover, as was the case at the all-India level, the farmers' movement became divided about the question of international trade liberalization and GATT. Two Interstate Coordination Committees of farmers emerged during this period at the national level, one led by Sharad Joshi, who favored liberalization, and one led by Mohinder Singh Tikait, who opposed it. In 1989, Punjab's BKU split into two factions, one of which took sides with Sharad Joshi. A further split occurred in 1994, so that three BKU groups emerged, one aligned with the economic liberalization reforms, one engaged in party politics, and one drifting towards the leftist farmers' organizations (Gill, 2000, 2004). The group involved in party politics cooperated with the Akali Dal and promoted the boycott of the State Assembly elections in 1992. The Congress Party won these election as a consequence of the boycott. The first competitive Assembly elections took only place in 1997.

During the period between under consideration here (1984 and 1997), the sustainability of Punjab's agricultural development pattern became increasingly an issue of concern. As early as 1985, the Government of Punjab had appointed a commission led by distinguished agricultural economist S.S. Johl. The commission argued for crop diversification and recommended a reduction of at least 20% of the area under rice and wheat. With regard to electricity, the committee acknowledged a need for subsidized electricity, but emphasized that the costs should at least partly reflect the scarcity of the scarcity value of the resource so as to create incentives for its economic use. Other recommendations included checking of electricity theft and the contracting out electric supply at the village transformers to the local unemployed graduates. Given the political circumstances, neither the recommendations regarding electricity nor those regarding crop diversification were implemented.

9.3.4 1997-2006: Electoral competition and the rise of the free electricity policy

1997 – 2002: Akali Dal-led government

By the time of the 1997 elections, identity politics had lost their appeal, and economic and social issues started to dominate the election campaigns (Jodhka, 2000; Kumar and Kumar, 2002). The Akali Dal took a "secular turn" (Narang, 1999). Moreover, agitation against the center, which had been a major theme for them, lost its

importance (Kumar, 1999). Instead, subsidies emerged as a major topic in the 1997 election campaigns. The Congress Party, which had been ruling between 1992 and 1997, also switched from liberal market reforms to a focus on subsidies for various sections of the society, especially after the assassination of Chief Minister Beant Singh in 1995. A committee report found that the explicit subsidies doubled between 1994/95 and 1996/79 (1999: 304). Similarly to the case of Andhra Pradesh, subsidies became an important topical for all parties prior to the elections, even if those parties had otherwise expressed commitments to liberalization reforms. As Kumar (1999: 304) observes:

“Interestingly, all the dominant political parties, i.e., the Congress, BJP and the Akalis, approved market reforms in principle, but made electoral promises against these reforms. In these elections, votes were sought for subsidies and people have voted for it.”

The Akali-BJP alliance won the elections and subsequently introduced free electricity to all farmers, together with free canal water, in spite of the precarious financial situation of the state at that time. As a consequence, the World Bank stopped funding projects in the state (Deccan Herald, 10/08/05). The coalition government was led by Prakash Singh Badal, himself a large-scale farmer. During the time of the Akali-BJP rule from 1997 to 2002, the area irrigated by canals decreased by 40%, which added considerably to the pressure on groundwater resources (World Bank, 2003c: 43). Unlike Andhra Pradesh and other states, Punjab did not engage in a policy to devolve authority in irrigation management. The Government developed a State Water Policy in 1997, and drafted the Punjab Groundwater (Control and Regulation) Act in 1998, which has, however, remained in draft since then.

In the power sector, efforts were made to attract Independent Power Producers in order to address the increasing shortage of power generation in the state, a typical “Phase 1” activity in the reform process. The Punjab State Electricity Regulatory Commission (PSERC) was created in 2000. Since then, the electricity subsidy to agriculture has been explicitly stated in the state budget, and compensations to the SEB have been made. More far-reaching reform activities towards unbundling were not undertaken during this period.

2002 Elections

Similar to the 1997 elections, subsidies played a major role in the election promises of all parties in the 2002 elections. In addition, personal attacks and allegations of corruption, nepotism and mismanagement were a prominent topic. The electoral battle between the Akali-BJP alliance and the Congress-CIP alliance got so heated that the

Election Commission had to advise the parties to exercise self-restraint (Kumar and Kumar, 2002: 1386). As in the case of Andhra Pradesh, farmers' suicides and the agrarian crises became important topics, as well. A representative survey showed that out of the 65.5% of the respondents who had heard about the suicides of cotton farmers in Punjab, almost 60% held either the Badal's Akali-led government squarely responsible for it, or blamed it along with the central government, which was aligned to it (Kumar and Kumar, 2002: 1388).

Nevertheless, it is important to note in the context of this study that the policy of the Badal government to supply free electricity to all farmers turned into a rather controversial topic. The measure was criticized as "populist," contributing to the fiscal deficit, and serving the rich rather than the poor. In fact, being introduced after the State Assembly elections in 1997, the policy had already been criticized during the campaigns for the 1999 national parliamentary elections (Jodkha, 2000). As Surinder Awasthi reported in "The Times of India" (quoted in Jodkha, 2000),

"apart from creating resentment in the urban middle classes, the scheme also created divisions between the tube-well owning cultivating landowners and others in the countryside. While free power is being supplied to the existing about seven lakh tube-well connections, there are more than three lakh applications for tube-well connections pending with the electricity board for a long time."

Jodka (2000) also observes that "many dalit leaders have also protested against giving electricity free to farmers while asking the poor dalits to pay their bills." The dalits are an important group of voters, constituting more than one quarter of the population in Punjab. In 1999, the government initiated a scheme of providing free electricity for domestic consumption to the members of scheduled castes and tribes and other backward classes. While no limits were applied to farmers, this scheme was limited to connections of not more than 300 watts and 30 units per household per month (Jodka, 2000).

The Congress-led alliance won the 2002 Assembly elections. As a post-election opinion poll showed, more than half of those who voted for the Congress-led coalition were of the opinion that the policy of supplying free electricity to farmers is unjustified, while only 19% considered it fully justified. By contrast, 59% of those voting for the Akali-led coalition considered this policy fully justified (see Table 12). As Table 13 shows, the Congress-led coalition has its major base among the poorer and the urban strata of society, whereas the opposite is the case for the Akali-led coalition.

The voting preferences displayed in Table 12 may help to explain why the Congress-led government discontinued these subsidies in a relatively short period after assuming office in 2002.³³ Still, the Congress Party did consider it politically necessary to take the policy up as an election promise in 2002 elections, and to re-introduce the free electricity policy again in 2005 in view of the 2007 elections. According to a newspaper report (Deccan Herald, 20/08/05):

“This time the government intends to grant the sop to only small and marginal farmers owning less than five acres of land. Another difference will be in the nomenclature as the sop would not be dubbed as ‘free power’ but an ‘energy bonus’ of Rs 300 per month to the farmers. Sources said this had been apparently done to appease international funding institutions.”

This strategy to resort to this policy at all may have been motivated by the intention to attract the votes from swing voters among the Jat Sikh farmers community. As Table 14 shows, the percentage of voters who made the decision for whom to vote during the campaign or on the polling day itself is particularly large among those who voted for the Congress-led coalition. In addition, agitations by farmers’ organizations against the withdrawal of the free power policy may also have played a role. The agitations included convincing farmers not to pay electricity bills as a form of protest. As Gill (2004) observes, this was one of the few instances where the different factions of the fragmented farmers’ movement in Punjab have started to work together again.

Table 12: Opinion on policy of Free Electricity to Farmers by Voting Preference (%)

<i>Opinion about free electricity to farmers</i>	<i>Party voted for during the 2002 Assembly Elections</i>				
	INC-CPI	SAD-BJP-DBSM	BSP	Panthic Morcha	Total
Unjustified	56	17	4	4	36
Somewhat justified	39	27	11	6	23
Fully justified	19	59	2	5	36

Source: Kumar and Kumar (2002: 1386).

³³ On its website, the Government explained this policy as follows (<http://www.punjabgov.net/roadmap.asp>): “The Congress had promised to continue free supply of electricity to the agriculture sector because it believed that the farmers do need subsidies, particularly when their counterparts in the West are given hefty subsidies. But the previous Akali-BJP coalition government’s misconceived policies had reduced the state to the level of near bankruptcy. The Congress government was, therefore, left with no alternative but to restore power tariff.”

Table 13: Socio-Economic Status, Locality and Voting Preferences (%)

<i>Socio-economic class</i>	<i>Party voted for during the 2002 Assembly Elections</i>			
	INC-CPI	SAD-BJP- DBSM	BSP	Panthic Morcha
Poor	51	18	12	-
Lower middle	41	30	7	5
Upper middle	41	27	5	6
Rich	31	50	1	5
Very rich	23	45	2	6
<i>Locality</i>				
Rural	31	37	6	8
Urban	49	30	4	-

Source: Kumar and Kumar (2002: 1387).

Table 14: Time of Taking Decisions on Voting by Voting Preferences (%)

<i>When voter made the decision</i>	<i>Party voted for during the 2002 Assembly Elections</i>			
	INC-CPI	SAD-BJP- DBSM	BSP	Panthic Morcha
On the polling day	35	27	10	4
During the campaign	39	23	3	6

Source: Kumar and Kumar (2002: 1385)

Having made governance a major topic of the election campaigns, the Congress-led government undertook some bold policy measures in this regard after being elected in 2002. It passed a “Fiscal Responsibility and Budget Management Act” (being the second state in India to do so), reduced the revenue deficit in 2003, encouraged public-private partnerships in infrastructure development, announced plans for significant decentralization in primary health and education services, and took some high-level measures against corruption, including filing a case against the ex-chairman of the Punjab State Electricity Board (<http://www.punjabgov.net/roadmap.asp>). However, a World Bank report, which acknowledges these initiatives, points to problems of subsequent implementation (World Bank, 2004a: 7): “The urgency to reform and the hectic pace of policy making, unfortunately, appears to be fading away.”

To promote the power sector reforms, the government appointed an expert committee led by Gajendra Haldea. The recommendations of the committee included open access; reducing power theft based on specific legislation; increasing tariffs for all categories of consumers; metering the power supplied to agriculture; reducing the staffing levels of the PSEB; and restructuring its debts. As the Government notes on its website (<http://www.punjabgov.net/roadmap.asp>): “The Haldea committee, which

has studied the post-reform power scenario in the various reforming states, has gone beyond recommending the commonly followed formula. It has suggested introduction of real competition in the system.” Unlike the Congress-led Government of Andhra Pradesh, which does not link its reform agenda to a need for privatization, the Congress-led Government of Punjab pursues a privatization strategy, in spite of the strong resistance from the employees, including the Engineers Association.³⁴ The Government of Punjab also signed a Memorandum of Understanding with the Government of India to implement the power sector reforms. While important steps have been undertaken, such as reduction of cross-subsidies and restructuring of debt, more far-reaching measures such as unbundling have not been achieved, so far.

As a major strategy to pursue crop diversification—a measure that would reduce the use of groundwater—the government engaged in an ambitious contract farming program (see Singh, 2004). Moreover, the government tried to promote water-saving agricultural management practices and experiments with groundwater recharging. As another water-related measure, the Punjab Assembly unanimously passed the “Punjab Termination of Agreements Bill” in 2004, which constitutes a one-sided termination of the river sharing agreements with Haryana and Rajasthan.

9.4 Summary and Implications

The cases of Andhra Pradesh and Punjab discussed in this chapter largely confirm the general analysis of the challenges involved in reforming the electricity supply to agriculture presented in Chapter 2 (especially Lal, 2006; Dubash, 2004; Dubash and Rajan, 2001). There are interesting state-specific variations, such as the prominent role of BKU in Punjab, and the dominance of the Jat Sikh (representing the better-off farmers) in the leadership of the Akali Dal Party in Punjab, or the specific roles that NTR and Chandrababu Naidu played in Andhra Pradesh. However, the basic factors that account for the unresolved situation are remarkably similar: (1) the establishment of the flat rate tariff and the subsidies since end of the 1970s following massive agitations by farmers’ organizations in Green Revolution states, against the background of the increasingly unfavorable price relations; (2) the current situation of agrarian distress, indicated by farmers’ suicides, combined with the perception that subsidies are a necessary instrument to alleviate the agrarian distress; and (3) the

³⁴ The Government notes on its website (<http://www.punjabgov.net/roadmap.asp>): “The PSEB employees have come out with alternative suggestions, but these cannot take care of such a grim situation.”

(perceived) need of all parties to engage in “populist” policies prior to elections, even if they are otherwise committed to reforms. The case of Andhra Pradesh shows that the policy of providing free electricity to the farmers is not necessarily an obstacle to power sector reforms. However, the case also shows that power sector reforms that are judged to be successful from an investor’s perspective (as indicated by the CRISIL rating) do not necessarily imply a better electricity supply to the farmers. Against this background, what are possible strategies to move beyond the impasse? Potential strategies have to take into account the role of the different stakeholders involved, and their perceptions and resources. Using the framework presented in Chapter 3, the next two chapters will deal with these questions.

10 The Politics of Electricity Supply to Agriculture: Analysis of Political Actors, Discourses and Strategies

This chapter presents the information derived from the stakeholder interviews (see Table 2), guided by the conceptual framework presented in Chapter 3. A detailed account of the perceptions and positions of the different groups of different stakeholders is provided in Annex 2, based on the interviews and additional data sources. Section 10.1 identifies major discourse and advocacy coalitions. Section 10.2 describes their belief systems and discourses. Section 10.3 deals with the political resources and strategies of different actors. Section 10.4 also reflects on the question to which extent policy-learning across coalitions has taken place or could take place. This will provide the basis for an analysis of the political feasibility of different reform options and strategies, which is presented in Chapter 11.

10.1 Discourse and Advocacy Coalitions

As indicated in Chapter 3, two types of coalitions are distinguished in this analysis: (1) discourse coalitions (groups of actors that share the usage of a particular set of story-lines over a period of time, and—by implication—share a common belief system, without necessarily engaging together in political action), and (2) advocacy coalitions, which constitute a sub-category of the discourse coalitions, based on the fact that its members do in fact engage together in a non-trivial degree over a period of time in political action to advocate specific policy options.

10.1.1 Discourse Coalitions

The analysis of the interviews and additional data sources (see Annex 2) led to the identification of two major discourse coalitions. Based on the major belief systems (paradigms) and the story-lines represented in their discourse, the two coalitions are labeled here the “market-oriented” and the “welfare state-oriented” discourse coalition. The members of the “market-oriented” discourse coalition favor increases in the electricity price and the introduction of metering to improve efficiency and reduce fiscal burden, whereas the members of the “welfare state-oriented” discourse coalition defend the electricity subsidies as a policy instrument of intersectoral income redistribution in view of a situation of agrarian distress. The core beliefs and specific beliefs of the two discourse coalitions are described in more detail in Section 10.2.

Among the organizations that were interviewed for this study, the following can be considered as belonging to the market-oriented discourse coalition: (1) the pro-liberalization farmers’ movement at the national level; (2) the Commissions on Farmers at the national level and in Punjab; (3) the management of the unbundled power utilities in Andhra Pradesh; (4) the TDP in Andhra Pradesh (under its current leader) (5) the Congress Party in Punjab and at the central level; (6) major international financial institutions and donors (World Bank, DFID, USAID). The following organizations can be considered as members of the welfare state-oriented discourse coalition: (1) most farmers’ organizations in both states except the pro-liberalization farmers’ movement; (2) the Commission on Farmers’ Welfare in Andhra Pradesh; (3) the organizations representing the energy sector employees; and (4) the Communist Parties in both states and the central level; and (5) the Congress Party in Andhra Pradesh (under its current leader).³⁵ Each of the two discourse coalitions also includes (1) public administration officials in the agricultural, energy and environmental administration; and (2) researchers from academia and think tanks.

Identifying these discourse coalitions, some important caveats have to be kept in mind: (1) Apart from the Communist Parties, the association of the political parties with one of the two discourse coalitions has its limitations, since the parties often adopt, for strategic reasons, different discourse strategies before and after elections (see Chapter 9). (2) There are groups that share a market-oriented story-line on some topics, and a welfare state-oriented story-line on other topics.

³⁵ Note that this classification only applies to the set of story-lines presented in Table 16. On other issues, the Party may well pursue a market-oriented discourse.

10.1.2 Advocacy Coalitions

While the existence of discourse coalitions is important in shaping the political debate, advocacy coalitions—groups of actors that share core beliefs and engage in political action together over a significant period of time—are particularly important to make policy change happen. Among the organizations covered in this research project, only one group could be identified that can clearly be characterized as an advocacy coalition: the People’s Monitoring Group on Electricity Regulation (PMGER) in Andhra Pradesh. PGMER brings together organizations representing electricity engineers and employees, farmers and agricultural laborers as well as environment and development NGOs (see Annex 2 for more details). The organizations that constitute PMGER can be characterized as belonging mainly to the welfare state-oriented discourse coalition, but they represent different sectors: agriculture, energy and the environment. Opposition against the privatization of the power sector was a major factor that brought the different groups together.

The position that this advocacy coalition has been promoting—free electricity for agriculture in combination with water- and energy-saving measures—can be considered as a joint formula which addresses the concerns of different constituents of this group: the farmers who are interested in financial relief, environmentalists, who acknowledged the farmers’ demands as a temporary (emergency) measure, but do not want to see sustainability goals compromised, and the energy sector employees and engineers, who consider a public sector reform a better model than privatization.

10.2 Belief Systems

This section describes the core beliefs and the specific beliefs shared by the two discourse coalitions. The classification of beliefs applied here has been described in detail Section 3.1.3.

10.2.1 Core Beliefs (Paradigms)

As indicated above, the two major systems of core beliefs or paradigms, which characterize the two discourse coalitions are referred to as “market-oriented” and “welfare state-oriented”.³⁶ Applying the labels that are commonly used in the policy debate in India, these paradigms could also be referred to as “neo-liberal” and “populist.” However, since both labels have a negative connotation in the Indian debate, the terms “market-oriented” and “welfare state-oriented” are preferred here.

³⁶ The authors are grateful to Anuja Saurkar for her advice on choosing these labels.

Table 15: Core Beliefs (Paradigms)

	Market-oriented	Welfare state-oriented
<i>Core beliefs</i>		
Role of the state and the market	Markets are the only coordination mechanism that leads to efficient outcomes. Any state intervention has to be designed in such a way that markets are not distorted. State failure is abound. Hence state intervention needs to be as limited as much as possible.	Markets, while in principle useful as a coordination mechanism in the economy, do not lead to socially desirable results. Market failures are abound. Hence, state intervention is necessary to ensure socially desirable results.
Nature of state intervention	State should play only a coordinating, facilitating and regulating role.	State should play an active role and engage in the provision of basic services.
Approach to environmental problems	Market-based instruments should be used (such as price mechanism, tradable permits)	Regulatory instruments should be used (such as restrictions on activities).
Self-and other representation		
Positive self-representation	Defender of a well-managed economic system (which, by implication, ensures poverty reduction)	Defender of the common people / the poor and their livelihoods
Negative other-representation	They don't understand the basic principles of economics. They represent the interests of the corrupt state bureaucracy.	They enjoy their own privileges and don't care for the common people / the poor and their livelihoods. They represent the interests of global capital.

Source: Compiled by authors according to interview information

Sill, in view of the wide use of the terms “neo-liberal” and “populist,” it is useful to briefly consider the meaning of these terms. “Neo-liberalism” has been described as a political-economic philosophy associated with five basic values: the individual; freedom of choice; markets; laissez faire; and minimal government (c.f. Belsey, 1996). These values are in fact central to what is referred to as the “market-oriented” paradigm here. “Populism” has been characterized as “a political philosophy or rhetorical style that holds that the common person’s interests are oppressed or hindered by the elite in society, and that the instruments of the state need to be grasped from this self-serving elite and used for the benefit and advancement of the people as a whole.”³⁷ Populism may be associated right-wing as well as left-wing

³⁷ See <http://en.wikipedia.org/wiki/Populism>

political ideologies, religious fundamentalism and other world views. Hence, apart from its negative connotation, the label “populist” is not appropriate to describe the core belief system that is characterized as “welfare-state oriented” here. According to this paradigm, market forces do not automatically lead to socially desirable results. Hence, in the welfare state-oriented paradigm, it is the major responsibility of the state to guarantee the welfare of the citizens.

Table 15 characterizes the main elements of the two core belief systems, or paradigms, as reflected in the interviews. As was apparent in some of the interviews, each paradigm is associated with a positive self-representation and a negative other-representation, which is also indicated in Table 15. Interpreting the table, one has to keep in mind that the table presents stylized facts or “pure types” of the respective core beliefs.³⁸ Individuals and groups typically hold positions that are somewhere in between, or combine elements of, the “pure types” described in the table.³⁹ Note that each of these paradigms can have an environmental dimension to it. Both paradigms share the notion that it is some type of market failure (due to externalities or public goods) that leads to environmental problems. However, the proponents of the two paradigms hold rather different views regarding the policy instruments that are appropriate to address those environmental problems: market-based versus regulatory. Stakeholders also differ with regard to the relevance they attribute to environmental problems as compared to economic or social problems.

One could define a third paradigm that focuses on communities and civil society rather than on the state or the market. However, while some interview partners mentioned community-based approaches in some contexts, such as decentralization, it was not a central element in any of the interviews conducted for this study. Therefore, the **“community-oriented” paradigm** has not been included as a third paradigm in Table 15. However, as will be further discussed in Chapter 11, a stronger focus on the community-oriented paradigm—as a third way between state and market—could be very useful in identifying policy solutions.

³⁸ Introduced by German sociologist Max Weber, a “pure type” or “ideal type” (*Idealtyp*) is an *analytical construct*, in which many discrete more or less present and occasionally absent individual aspects are arranged and synthesized into one single category by emphasizing one side of those aspects. Using “pure types” or “ideal types” is a common approach sociological analysis.

³⁹ See Annex 2 for a more disaggregated presentation of perceptions and positions of different stakeholders.

10.2.2 Story-lines and Specific Beliefs

Table 16 presents the elements of a set of major story-lines related to the electricity supply to agriculture, which can be derived from the interviews and serve to identify specific belief systems. The story lines that were present in the interviews, partly triggered by the questions, refer (1) to the agricultural situation in general, (2) to the electricity subsidies to agriculture; (3) to the energy-groundwater nexus and the related groundwater-surface irrigation water nexus; and (4) power sector reforms. As in case of Table 15, Table 16 presents “pure types” of these story-lines. The types of beliefs (central and instrumental policy beliefs, factual and causal beliefs, see Figure 3) are indicated by the respective letters in Column 1.

As indicated in Chapter 3, specific terms or phrases are often used as metaphor for an entire story-line. Those words or phrases are marked in italics in Table 16. For example, in the welfare state-oriented story-line on power sector reforms, the term “*Orissa model*” represents a whole set of negative experiences related to the privatization of the power sector. Likewise, in the market-oriented story-line, the term “*telecom sector*” refers to a whole set of positive experiences related to privatization.

Table 16: Major Story-Lines and Specific Beliefs

	Market-oriented	Welfare state-oriented
1) Agricultural situation in general		
General situation of agriculture (f)*	Low <i>growth rate in agriculture</i> ,** leading to increasing rural-urban income disparity	<i>Agrarian crisis</i> , indicated by high <i>suicide</i> rates and high levels of indebtedness
Reasons for problems in the agricultural sector (f)	Reforms have not gone far enough so that large inefficiencies remain; <i>subsidies crowd out productive investments</i> ; too much emphasis on food crops (which could be imported); farm lobby prevents reform	Economic reforms have harmed farmers, especially small and marginal farmers, e.g., by reducing access to institutional credit and extension; minimum support price too low; land reforms not implemented
2) Electricity subsidies to agriculture		
Role of electricity subsidies (f, p1)	Electricity subsidies are the major element in the “ <i>vicious cycle</i> ” leading to quality of electricity supply and low income. Subsidies are a major obstacle to power sector reform.	Electricity subsidies are an <i>important instrument to alleviate the crisis in the agricultural sector</i> . Subsidies are not an obstacle to power sector reform, if it is a public sector reform.
Assessment of magnitude of the subsidies (p2)	Very high; <i>drain on state financial resources</i> ; major reason for high fiscal deficit and low investment in infrastructure and social services	Considerable, but not the major problem for state financial resources, if compared to the resources lost due to <i>problems such as tax evasion</i>
Targeting of subsidies (p2)	If subsidies are provided at all, they should be <i>targeted</i> and provided in a way that does not distort markets (e.g., as direct income transfers, or as a tradable entitlement)	Two opinions: 1) Rich farmers (“landlords”) should pay for electricity. 2) Electricity should be free for all farmers as targeting will not work (will lead to exclusion)

		of the poor)
3) Energy-groundwater nexus and related groundwater-surface irrigation nexus		
Relation between flat-rate / free policy and groundwater extraction (f)	Flat rate and free electricity as major reason for groundwater exploitation; as <i>marginal cost is zero</i> , there is no incentive to save water.	Flat rate and free electricity not the reason for groundwater over-extraction; it is not in farmers' own interest to overuse water; moreover, <i>electricity supply is time-restricted</i>
Relevance of metering (f, p2)	Absolutely necessary to improve efficiency regarding both energy and water use	Preferable, but difficult to implement due to <i>high transaction costs</i> ***
Strategies to save groundwater	a) <i>Increase electricity price</i> and introduce water pricing / promote water markets, if electricity pricing is not sufficient b) <i>Water-saving technologies; crop diversification</i>	a) Use regulatory instruments such as <i>restrictions on bore wells</i> (or introduce state ownership) b) <i>Water-saving technologies; crop diversification</i> , but only if <i>food self-sufficiency</i> can be maintained
Options (p2)		
Strategies for crop diversification (p2)	<i>Contract farming</i> ; reducing minimum support price for staple food	Minimum support price and public procurement for other crops; contract farming exploits farmers
Link between groundwater and surface irrigation (c, p1)	Reduction of subsidies for surface water irrigation and more efficient management; Joint management of both water resources	More public investment in surface irrigation needed; more equitable access to surface water irrigation; joint management of both water resources
4) Power sector reforms		
Reform model for the power sector (p1)	<i>Liberalization, privatization and competition</i> are essential; <i>Telecom sector</i> as successful example for benefits of such reforms	<i>Orissa model</i> has shown negative consequences of privatization; reform of the public sector required and feasible;
Reduction of theft (p2)	Theft by all categories of consumers should be reduced.	Theft is mainly done by large-scale users and should be reduced.
Unbundling (p2)	Essential requirement, improves efficiency even if privatization is not achieved	Not a useful strategy; imposed because it is a condition for privatization
Role of regulation (p2)	<i>Independent regulation</i> to address market failure; should mediate between industry and consumers	Independent regulation, which should ensure <i>people's participation</i>
Decentralization (p2)	Decentralization should be tried (franchising; private sector-involvement)	Decentralization should be tried; (community-based management; involvement of Panchayats)
Role of IFIs, donors and consultants (p1)	Provide necessary resources and valuable technical assistance	Represent the interests of international capital; (esp. the <i>World Bank</i>)

* Type of belief: (f): factual and causal beliefs, (p1): central policy beliefs; (p2): instrumental policy beliefs.

** Words in *italics* are key words or phrases that are often used as metaphors to refer to the entire storyline.

*** This argument is not necessarily associated with the welfare state-oriented discourse, it is also held by actors who are otherwise associated with the market-oriented discourse.

Not surprisingly, the paradigms to which these two sets of story-lines belong, reflect the positions of the reform advocates and the reform critics in the general debate on the economic reforms in India, as reviewed in Chapter 2. Even though some changes in “pure” positions towards a middle ground could be observed, such as targeted subsidies, the sets of story-lines reflected in the interviews showed a remarkable degree of coherence with either the market-oriented or the welfare state-oriented paradigm.

As has been indicated above, both discourses were represented across almost all the different stakeholder groups, including organizations representing the agricultural sector, the energy sector, the research community, and the political parties (see Annex 2). For example, the Liberal Farmers’ movement clearly represents the market-oriented paradigm, whereas the All India Kisan Sabha represents the welfare state-oriented paradigm. The group of donors and international financial institutions was the only group from which the welfare state-oriented paradigm was almost completely absent, but that may be attributed to the limited number of organizations covered in this category (World Bank, DFID and KPMG).⁴⁰

To understand the role of these paradigms in political processes, a reflection on the relation between discourse, underlying beliefs, and material interests is important. If one assumes that material interests alone are the ultimate driving forces of political processes,⁴¹ discourses and their story-lines are merely strategic devices that groups use to pursue their interests: politicians want to be re-elected; the bureaucracy wants to expand its position and benefits; and different groups of society want to pursue their economic interests. Contrary to this analytical perspective, the current paper takes the position that politics is driven by *both* interests and ideas, and that it is important to acknowledge both in search of policy solutions. Hence, the values and beliefs that actors hold are considered important in shaping policies. This does not preclude that actors may deviate from those values and beliefs for strategic reasons, both when communicating and in practical action, because material interests matter, too. Empirically, it is, of course, difficult to judge to which extent a group presents certain position only for strategic reasons, or truly beliefs in it. The available evidence quoted in Annex 2, however, gives some clues. For example, it appears that the Congress Party leaders in Punjab adopted the free electricity policy for strategic electoral reasons only (as the interview partners themselves indicated), whereas the Congress

⁴⁰ Note that India has restricted the number of bilateral donor agencies operating in the country. Hence, some of the agencies that may have a more welfare state-oriented approach are not active in India.

⁴¹ Such analytical positions are found both in the neo-classical and the Marxist literature on political economy.

Party leaders in Andhra Pradesh seem to believe in the measure as an appropriate strategy to address rural distress.⁴² Likewise, it was the impression of the interviewers that most of the interview partners who expressed the view that free electricity or flat rate tariffs are not related to the over-extraction of groundwater were not arguing strategically to defend the subsidy.⁴³

10.3 Political Resources and Strategies

According to the conceptual framework outlined in Chapter 3, it is important to identify the political resources that different actors or coalitions can mobilize to create political capital. Political capital has been defined as the resources that an actor can use to realize outcomes that are in the actor's perceived interest. This section describes the resources and strategies used by the major actors. Most actors pursued their political struggles individually. As indicated above, only one group (advocacy coalition) was identified, the People's Monitoring Group on Electricity Regulation in Andhra Pradesh, which comprised organizations from different sectors that acted jointly in the policy arena to pursue a particular policy option.

10.3.1 Farmers' Organizations

The empirical research showed that farmers' organizations use a variety of political strategies to create political capital for their positions. Organizing public protest such as demonstrations, the major strategy used in the 1980s (see Chapter 9) remains an important strategy. Different resources are required to organize public protest, including a large enough network of members or followers (a form of social capital), charismatic leadership, and the political skills to mobilize farmers around a certain topic (a form of human capital). It is important to note that not all farmers' organizations have formally registered members. As one interviewed farmers' leader pointed out, this is a strategy to avoid political repression. Apparently, the number of farmers that the organizations can mobilize for demonstrations has declined since the 1990s. This may be related to the fragmentation of the farmers' movement (see Chapter 9).

Lobbying political decision-makers is another important strategy employed by the farmers' organizations. Resources needed for this strategy include the ability to

⁴² See Annex 2. Moreover, the Andhra Pradesh Congress Party has continuously maintained the free electricity policy after elections and was willing to forgo a World Bank loan, before the World Bank changed its position on the matter.

⁴³ Consider that, for example, members of the Indian Ecological Society, who had no material interest in electricity subsidies, held this view.

mobilize the farmers' votes, and personal connections with politicians (a form of social capital). The Federation of Farmers' Organizations in Andhra Pradesh provides an interesting example for an advanced lobbying strategy. The organization maintains an office with several staff members and invests in providing information in print about farmers' demands and about the situation of the farmers (such as information based on the survey on the quality of electricity supply). At the national level, the organization has engages with the Parliament Members Farmers' Forum, for example, by giving presentations. Obviously, this approach requires financial resources and a membership that can provide such resources. The farmers' organizations associated with the Communist Parties can benefit from their cadre-based organizational support.

Another avenue by which farmers' interests are politically represented is through the members of the parliaments. A considerable share of the members of the State Legislative Assemblies in Punjab and Andhra Pradesh has an agricultural background. Some leading politicians also have an agricultural background. For example, Punjab's Chief Minister from 1997 to 2002, is himself a large-scale farmer.

It is worth noting that India's political system does not provide a formal channel by which farmers' organizations can voice their interests. For example, there are no hearings of the State Assemblies to which farmers' organizations are formally invited. The Farmers' Commissions are comprised of academics and officials, who may be "farmer-friendly", but they do not include leaders of farmers' organizations. Against this background, the Electricity Regulatory Commission represents an important institutional innovation, because it does provide a forum where farmers' organizations and other stakeholders can participate.

Considering that the farmers constitute a considerable share of the electorate, mobilizing farmers' votes is obviously a major strategy to political capital, in addition to lobbying and organizing political protest. As Chapter 9 shows, electricity pricing for agriculture is used as an important electoral strategy of the political parties to attract the farmers' votes. Accordingly electoral promises regarding electricity pricing play an important role in the decisions of farmers' organizations to support certain political parties prior to elections. The ability of placing the topic of "agrarian distress" high on the political agenda prior to elections is an important strategy to create political capital in form of electoral leverage.

10.3.2 Agricultural Labor Organizations

Even though the agricultural laborers present a considerable share of the rural population, especially in Andhra Pradesh,⁴⁴ their ability to create political capital appeared to be more limited than that of the farmers' organizations. As an indication, the public discourse on "agrarian distress" focuses almost exclusively on the farmers, and the issue of farmers' suicides, while neglecting the situation of the agricultural laborers. This neglect occurs despite of the fact that the agricultural laborers are organized. The Agricultural Workers' Union in Andhra Pradesh can draw on a comparatively large membership base of more than one million members (a form of social capital), to mobilize votes, organize protests and engage in lobbying. The topic of electricity supply to agriculture is, however, only of indirect interest for the Agricultural Workers' Union (see Annex 2 for details). As discussed below, the Union joined, however, the People's Monitoring Group on Electricity Regulation and used their political resources to promote the goals of this group.

10.3.3 Energy Sector Employees

The two major types of resources that the energy sector employees can mobilize are their technical and organizational knowledge (human capital) and their extensive membership (social capital) to create political capital. In both states, the Engineers' Associations have engaged in lobbying, thus bringing to bear their expertise on electricity issues. For example, the Engineers' Association of the Punjab State Electricity Board has produced various documents that analyze the reform experience in other states and present alternative reform proposals to privatization, such as functional unbundling. Obviously, an important political strategy of the employee organizations is the threat of going on strike. In Andhra Pradesh, this potential has allowed them to enter into a negotiation process and a tripartite agreement that protects their interests. In Punjab, the Technical Services Union has cooperated with the Kisan Sabha Union (farmers' organization) in campaigning against privatization. Both organizations can benefit from organizational support by CPI (M).

10.3.4 People's Monitoring Group on Electricity Regulation (PMGER)

As has been mentioned in Section 10.1.2, PGMER is formed by organizations that have a large membership base, which represents social capital (farmers, agricultural laborers, energy sector employees) and by organizations with specialized knowledge, e.g., on environmental issues (human capital). The political strategies of PGMER

⁴⁴ According to the 2001 Census, 34% of the rural population in Andhra Pradesh are agricultural laborers, in Punjab, the figure is 16% (GoI, 2001).

include public awareness and educational campaigns using the media, mobilizing voters prior to elections, and lobbying with Members of the State Legislative Assembly.

10.4 Policy-Oriented Learning Across Coalitions

The above analysis shows that, so far, discourse coalitions have mainly been formed among groups that basically share the same discourse. This also applies to PGMER, the only advocacy coalition that could be identified. In its pure form, the two discourses represent different positions on almost every aspect that is relevant with regard to electricity supply to agriculture. Moreover, the debate about electricity supply to agriculture is clearly a case where *core* beliefs are in dispute—core beliefs about the role that the state vis-à-vis the market should play in economic policy. For this case, Sabatier (1993: 27) had formulated the following hypothesis:

“On major controversies within a policy subsystem when core beliefs are in dispute, the lineup of allies and opponents tends to be rather stable over periods of a decade, or so.”

The fact that no consensus has been found on the question of electricity pricing to agriculture for more than a decade seems to be in line with this hypothesis. In this situation, the process of policy-learning across coalitions with different belief systems presents an important element in any strategy to overcome the impasse. There is evidence that, to the extent that change happened at all, policy learning was in fact part of the process.

The most notable policy change that did happen in the two states studied here is the power sector reform in Andhra Pradesh, which turned the energy sector in this state into the best performing in the country. As Section 9.1.3 showed, the launching of this reform was based on considerable efforts to reach out to different stakeholder groups and informing them about the planned reform, and—importantly—due to a negotiation process between the government and the State Electricity Board on the one hand, and the organizations of the power sector employees on the other hand. This can be interpreted as a case where far-reaching efforts were made to (a) accommodate the material interests of a major stakeholder group (the employees) who were likely to be losers of the reform, and (b) promote policy-oriented learning across groups sharing the market-oriented paradigm and those sharing the welfare-oriented paradigm. On the question of electricity pricing, however, the process of negotiating solutions across groups with different material interests and belief systems was less well managed, and ultimately unsuccessful (see Section 9.1.3). Any subsequent policy learning took place within rather than between coalitions with different belief systems, as the case of PGMER shows.

In the case of Punjab, the evidence collected for this study shows that with the establishment of the Electricity Regulatory Commission, a forum has been created where stakeholder groups representing the different interests and belief systems can and do in fact interact. However, major efforts to promote negotiation and policy-learning beyond the activities of the Electricity Regulatory Commission could not be observed.

With regard to future efforts to find solutions to the problems associated with the electricity supply to agriculture, it will be useful to promote policy learning across groups with different belief systems. In the first phase, it will be useful to concentrate on those areas (a) where there is most consensus, and (b) where instrumental policy beliefs rather than central policy beliefs or core beliefs are at stake. According to these considerations, the following areas of intervention appear promising:

(1) There is a rather far-reaching consensus across groups with different belief systems that the income situation in the agricultural sector is a major concern. Hence, it is important to identify policy solutions that do not lead to a further decrease of the incomes of rural household that are already below a certain income level, not even in the short run. Policy options that even increase the income of this group will have even better prospects to succeed.

(2) There seems to be a comparatively far-reaching consensus on the targeting of subsidies, which constitutes a middle ground where members of the market-oriented and the welfare state oriented paradigm can meet. In the case of Andhra Pradesh it was possible to introduce targeting, though on a limited scale, without major resistance. There are even farmers' organizations, such as the Federation of Farmers Associations in Andhra Pradesh, who propose targeted subsidies. There is also evidence that members of the market-oriented discourse coalition have moved in this direction. For example, the interviewed members of the National Planning Commission stated that agriculture in India needs to be subsidized, but that subsidies should be targeted. The challenge of targeting is, however, an efficient and effective implementation.

(3) Members of the two discourse coalitions differ with regard to several factual and causal beliefs. Hence, providing more empirical evidence on the respective issues could contribute considerably to policy-oriented learning across coalitions. The most striking example is the link between electricity pricing and water consumption (essentially an empirical question!), on which the members of the different discourse coalitions had completely different views (see also Annex 2). The interviews indicated that members of the market-oriented discourse coalition consider the argument of zero marginal costs in itself so compelling that they feel empirical evidence is not needed

to make this point. However, as the interviews showed, the argument alone—without empirical evidence—does not convince stakeholders who hold different causal beliefs on the matter. Another example is the transaction costs of metering. Even though this is essentially an empirical question, too, it seems that limited efforts have been made to estimate these costs under different scenarios. In both regards, it may be important that the respective information is provided by research institutions which are considered to be neutral, and in which members of both discourse coalitions trust. Moreover, the respective information needs to be provided in a form that is easily accessible.

(4) There is a range of “third-way” solutions, which fall in between the market-oriented and the welfare-state centered paradigm, because they focus on communities rather than state institutions or the private sector. A prominent example is the devolution of responsibilities to local communities, for example, by creating transformer-user associations or energy cooperatives, possibly linked with groundwater user associations. There is already practical experience in this regard, promoted both by foreign-funded projects (such as WENEXA), and by farmers’ organizations themselves (such as the Andhra Pradesh Federation of Farmers Associations). Yet, while such solutions seem to be highly acceptable for groups with different belief systems, they hardly figured in the discourse of the interviewed stakeholders.

(5) The case of the power sector reforms in Andhra Pradesh shows that policy change is easier to achieve, if it concentrates on areas that are subject to instrumental policy beliefs, such as unbundling (restructuring within the public sector), rather than policy core beliefs, such as privatization. The fact that reform efforts in Punjab concentrate on a rather far-reaching reform model (privatization) may well contribute to the lack of progress that has been achieved so far. As in the case of targeted subsidies, unbundling without privatization, might be an option where groups with opposite belief systems can find a middle ground.

Taking these insights into account, the final chapter will discuss several policy options and reflect on the types of political processes, by which they can be achieved.

11 Policy Implications for Electricity Supply to Agriculture

This chapter derives policy implications from the analysis presented in the previous chapters. In Section 11.1, a range of policy options is presented that address the different problems involved in the electricity supply to agriculture. Section 11.2 assesses the political feasibility of the different options, based on the description and

analysis presented in Chapters 9 and 10. Section 11.3 discusses different types of policy processes and political strategies by which policy change can be achieved.

11.1 Reform Options: A Synopsis

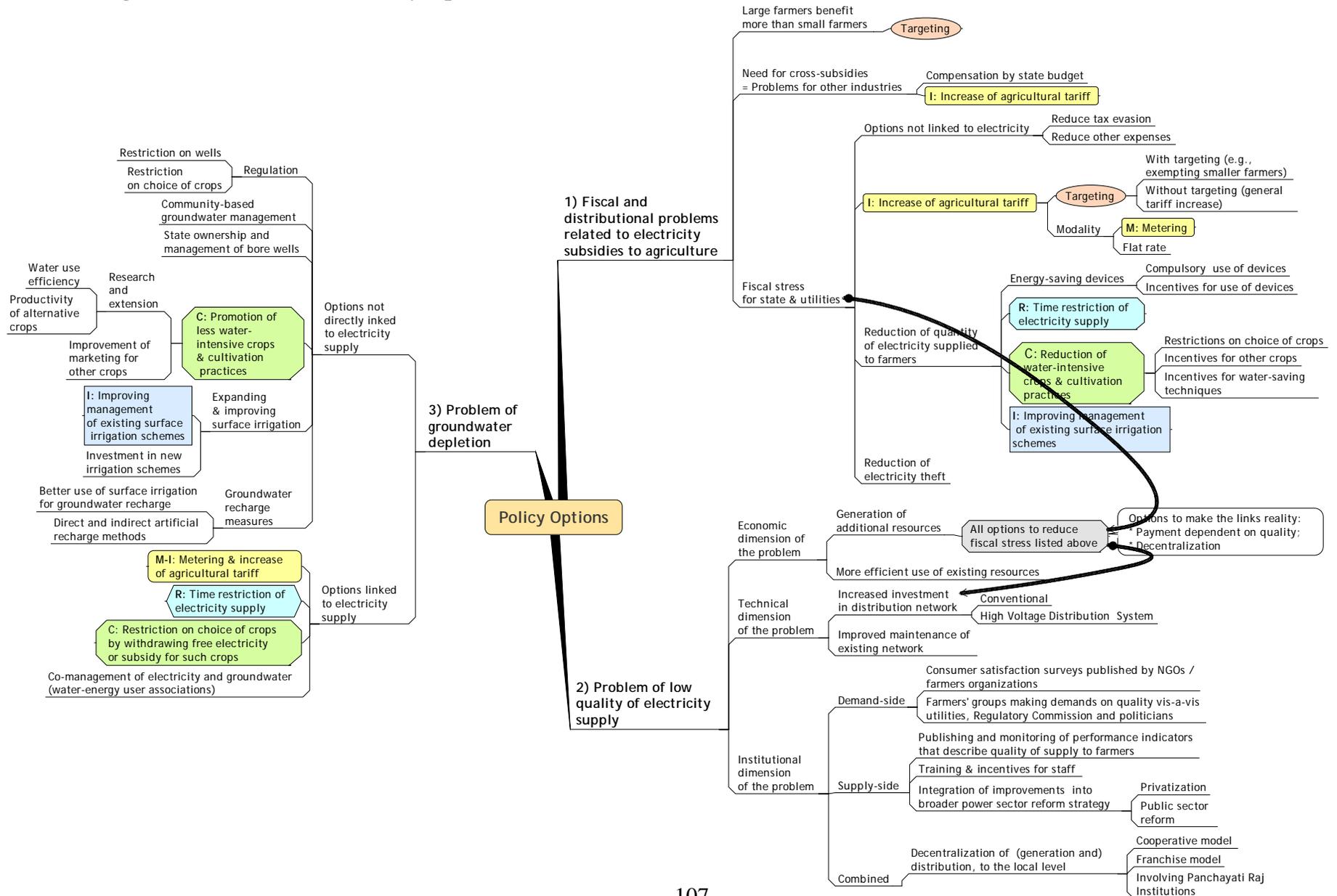
11.1.1 Classifying Reform Options

Since the problems associated with the electricity supply to agriculture are complex and manifold, it has been widely acknowledged that “tariff reform alone will not succeed” (Gulati and Narayanan, 2003: 123; see also Dubash, 2004). In the literature and in the interviews conducted for this study, a range of reform options has been put forward. In view of the diversity of these options, it is useful to classify them before moving to an assessment.

The policy options can be classified according to various criteria, including (1) the type of problem—or combination of problems—they primarily address; (2) the paradigm—market-oriented, welfare state-oriented, or community-oriented—they are most closely associated with; and (3) whether they are primarily economic, technical or institutional in nature. These criteria refer to the nature of the policy options and serve to *characterize* them. Criteria that can be used for *assessing* reform options are discussed in Section 11.2. Figure 8 displays a “mind-map” of a classification that is based on the primary problem that the policy options aim to address. Three primary problems are distinguished: (1) the fiscal and distributional problems related to the electricity subsidies to agriculture; (2) problems related to the quality of the electricity supply to agriculture, and (3) the problem of groundwater depletion. As can be derived from Chapter 10, the stakeholders differ in their views as to how and to which extent these problems are interlinked.

Policy options that have the potential to address at the same time certain aspects of both the groundwater depletion problem and the fiscal and distributional problems related to the electricity subsidies appear twice in Figure 8.

Figure 8: Classification of Policy Options



These options are marked by the same colors, shapes and letters. The reason for choosing this way of representation is the possibility to display at the same time *alternative or additional policy options that are available* to address the respective problems.

All policy options that reduce fiscal stress for the electricity utilities will, in principle, allow the utilities to invest more in the distribution network and, hence, the quality of supply. This link between the fiscal problems and the quality of supply problems is indicated by the arrows in Figure 8, together with an explanatory box indicating the options that would make this link effective.

11.1.2 Overview of policy options

11.1.2.1 Linkages between policy options

Before describing the different policy options, it is useful to briefly recapitulate to which extent one option can address different problems at the same time. The policy option that focuses most directly on addressing electricity and groundwater problems at the same time is an increase in the electricity price paid by the farmers (also referred to as “increase in the agricultural tariff”⁴⁵) in combination with metering. From the perspective of the market-oriented paradigm, this is the “first-best option.” As can be derived from Chapter 10, the interviewed stakeholders have, however, rather different views on the strength of the link between electricity pricing and groundwater use. Accordingly, they differ in their assessment as to which extent this option will address the groundwater problem. Policy options that aim specifically at reducing groundwater use, such as promoting less water-consuming crops, or improving surface irrigation to reduce the need for groundwater use, have the (side-)effect to reduce the electricity consumption and, hence, the fiscal problems associated with the electricity subsidy. Measures that aim at reducing the agricultural electricity consumption also reduce the fiscal problems associated with the electricity subsidy to agriculture. Some of these measures also reduce groundwater use, such as further time restriction of the electricity supply, while others, such as using energy-saving devices, do not have this effect on groundwater.

⁴⁵ The policy option “increasing the agricultural tariff”, as used in this chapter, always refers to the price that the farmers actually pay. Note that the Electricity Regulatory Commissions set a tariff for the agricultural sector even if a free power policy is adopted. This tariff is then used to calculate the amount of subsidy for which the government has to compensate the utilities.

11.1.2.2 Policy options that address the fiscal and distributional problems related to the electricity subsidies to agriculture

One can distinguish three different types of problems in this regard: (1) fiscal stress for the state, (2) fiscal stress for the utilities; (3) cross-subsidies that increase the electricity price for other industries; and (4) the distributional problem, i.e. large farmers benefit more from this subsidy than small farmers. All policy options that include targeting of subsidies address the third problem. The need for cross-subsidies can be reduced if (a) the agricultural tariff is increased, and/or (b) the state compensates the utilities to a larger extent for the agricultural subsidy so that they can reduce the cross-subsidies. The second problem—fiscal stress for the utilities—can be reduced if the state compensates the utilities, as it is now largely the case in Andhra Pradesh and Punjab. The first problem, fiscal stress for the state, can be reduced through an increase in the agricultural tariff. The fiscal stress problem will be addressed independently of whether this measure is associated with targeting or metering. As long as the farmers do not pay the full cost-to-serve for the electricity they receive, metering will lead to a further reduction of fiscal stress, if it reduces electricity consumption.

There is a variety of alternative policy options to reduce the amount of electricity consumed by agriculture, and hence the subsidy involved, without using the electricity price mechanism. As shown in Figure 8, these options include:

- (1) promotion of energy-saving devices such as capacitors or more efficient motors, using (a) incentives or (b) regulation; (for capacitors, this policy option is now implemented in both Andhra Pradesh and Punjab);
- (2) further restrictions of the amount of electricity supplied to agriculture (rationing) by (a) simply reducing the hours of supply (a measure that has been used both in Andhra Pradesh and Punjab), or (b) adjusting the supply better to the crop needs (as proposed by Shah et al., 2003);
- (3) promotion of less water-intensive crops using (a) restrictions (in Andhra Pradesh, the government stated it would withdraw free electricity for paddy cultivation in the *rabi* season, but could not implement this policy) or (b) incentives such as the promotion of crop diversification (which involves in itself a range of highly contested policy issues, such as contract farming);
- (4) promotion of water-saving practices in paddy cultivation, an option with a considerable potential for saving both water and energy, but considerable agronomic challenges, thus requiring agricultural research and extension; and

- (5) expanding and/or improving the efficiency of canal irrigation, as a means to reduce the need for groundwater irrigation. This policy option also involves in itself a range of highly contested policy issues, such as potential environmental problems associated with new large-scale irrigation projects, and controversies about market-based versus community-based strategies for improving irrigation management).

As shown in Figure 8, a further policy option to reduce fiscal stress for the utilities is to reduce power theft. In addition, as several interview partners emphasized, there is a range of policy options not linked to electricity subsidies, by which fiscal stress can be reduced. Several interview partners emphasized the need to reduce tax evasion, an option that may also have positive distributional implications. To assess the potential of this option, it is useful to know that, according to a Task Force Report submitted to the Government of India, at the end of the 1990s tax evasion rates were as high as 75% to 80% (GoI, 2002).

11.1.2.3 Policy options to address the problem of the low quality of electricity supply to agriculture

To analyze the policy options regarding this problem, it is useful to distinguish its economic, technical and institutional dimension.

Economic dimension

Improving the quality of the electricity supply to agriculture requires considerable investment in the distribution system, even though there are also measures that do not require additional investment, such as improving the effectiveness of the electricity utility staff in maintaining the electricity lines and other equipment. Obviously, measures that increase the revenues of the utilities, such as increased agricultural tariffs, increase the scope for investing in the quality of the supply to agriculture. However, there is no guarantee that an increased agricultural tariffs will in fact lead to such investment. As several interview partners pointed out, agriculture is likely to remain a loss-making category for the power utilities, unless the tariff is in fact increased to the cost-to-serve agriculture. This is not likely to happen any time soon in either of the two states. Decentralization (see below) may resolve this problem to some extent. Another option is to link the tariff that farmers pay to the quality of the electricity they receive, a suggestion made by the interviewed members of the Planning Commission. The utilities could also devise a scheme in which they offer farmers to receive 24 hours quality power supply, if the farmers are willing to pay the cost-to-serve for this service. This would be an interesting empirical test for the farmers' willingness-to-pay. The disadvantage of such schemes is that it might lead to

a “two-class” system, where the better-off farmers—who can afford it—receive high-quality electricity against payment, whereas the rest of the farmers are left with an increasingly deteriorating system.

Technical dimension

With regard to the technical dimension of improving the quality of electricity supply to agriculture, the option of using the High Voltage Distribution System (HVDS) has received particular attention. On the one hand, this option requires considerable investment, on the other hand, it has a substantial potential to reduce electricity theft.

Institutional dimension

From an institutional perspective, one can distinguish between (1) demand-side approaches, (2) supply-side approaches, and (3) combined approaches to improve the quality of electricity supply.

(1) *Demand-side approaches* focus on the ability of the consumers, in this case the farmers, to demand better services. Examples are public hearings of the Electricity Regulatory Commissions in which farmers participate, or Advisory Boards to the Commissions in which farmers’ organizations are represented. Another approach are consumer satisfaction surveys, for example, using the Citizen Report Card method developed by the Public Affairs Center in Bangalore.⁴⁶ This method characterized by two principles: (a) The survey is conducted in a statistically representative way by an independent group, e.g., an NGO. (b) The media play an important role in publishing the results, thus creating transparency and pressure on the service providers to improve their services.

(2) *Supply-side approaches* include all measures that the energy utilities (as suppliers) can do to improve the quality of supply. Apart from the technical options mentioned above (which can also be considered as supply-side approaches), there are a variety of institutional and management approaches that could be adopted to improve the quality of supply. As a first step, utilities could provide more transparency about both the quantity and the quality of the electricity supply to agriculture by publishing regionally disaggregated statistics in a form that is easily accessible (website and print). There is a move in that direction, especially for urban areas, promoted by the Electricity Regulatory Commissions. However, this information could not be found in a publicly available form for the electricity supply to agriculture. Such information would be essential to improve the transparency and accountability for the electricity

⁴⁶ See <http://www.pacindia.org/>.

supply to agriculture, and to complement and support the demand-side approaches mentioned above.

One of the major institutional challenges in improving the quality of electricity supply to agriculture is the provision of incentives for the field-level staff in rural areas to work efficiently, avoid corruption and be responsive to the farmers' needs. Since the utilities in both states have tens of thousands of field staff, this is obviously an enormous task. Appropriate strategies have to be seen in the context of a wider electricity sector reform. As can be derived from the previous chapter, there are different reform models, which are highly contested. In short, one can locate the reform options on a continuum between (a) privatization (following the market-oriented paradigm, the approach pursued by the Congress party in Punjab), and (b) public sector reform (following the welfare state-oriented paradigm, currently pursued in Andhra Pradesh). Public sector reform models may incorporate "New Public Management" techniques, which typically include (a) increasing the autonomy of the utilities and limiting political influence; and (b) using private sector management techniques to create incentives for staff members.

A policy option that combines demand-side and supply-side aspects is to involve agricultural users more directly into the distribution of electricity supply by *decentralization and devolution*, i.e. devolving tasks and responsibilities to the local level. This option can be pursued in different ways, including the franchising model (a private sector approach), forming electricity cooperatives or transformer user groups (a community-oriented approach) and/or by involving locally elected bodies, the Panchayati Raj institutions (representing a mix of state- and community-orientation). In Andhra Pradesh, there were several examples of community-based approaches. For example, there are well-established Rural Electricity Cooperatives.

11.1.2.4 Policy options to address the problem of groundwater depletion

With regard to the problems of groundwater depletion, it is useful to distinguish policy options that are directly linked to the electricity supply, by using either the electricity price or the quantity of electricity supplied, and options that do not use either of these mechanisms. The options related to the electricity price and quantity supplied have already been discussed above. Likewise, the policy options to reduce the cultivation of water-intensive crops, to promote water-saving cultivation practices, and improvements in surface irrigation to reduce then need for groundwater have already been dealt with in Section 11.1.2.2.

When identifying policy options for groundwater use, one has to keep in mind that that groundwater has to some extent the characteristics of a common-pool resource.⁴⁷ Volumetric electricity pricing, while creating incentives for using groundwater more efficiently, does not solve the collective action problem arising among the farmers who use the same aquifer.

Policy options that address the groundwater problem include (1) the regulation of bore wells, as foreseen in the AP WALT Act, (2) state ownership of bore wells, as suggested in the report of the Andhra Pradesh Commission on Farmers' Welfare, and (3) community-based management of groundwater, as promoted, for example, in an FAO project in Andhra Pradesh (described in Annex 2). The first two options correspond to the welfare state-oriented paradigm, whereas the last option corresponds to the community-oriented paradigm. The regulation of bore wells can be associated with the welfare state-oriented or the market-oriented paradigm. The proposal of state ownership of bore wells made by the Andhra Pradesh Commission on Farmers' Welfare also involves the price mechanism, since the suggestion is to sell water from state-owned and state-managed bore wells to farmers on a volumetric basis.

11.2 Evaluating Reform Options

Since this paper focuses on the political economy of electricity supply to agriculture—a question of positive policy analysis—assessing different policy options from a normative perspective is clearly beyond the scope of the paper. The analysis provided in this paper focuses on the political feasibility of different options (Section 11.2.2). However, to understand the political feasibility of different options, it is useful to keep in mind that societies have multiple goals, hence policy options need to be assessed against multiple criteria with a view to identifying *trade-offs*. As long as there are trade-offs, decisions on the policy options involve value judgments. In keeping with Max Weber's recommendations for objectivity in the social sciences, it is *not* the role of researchers to make such value judgments—this is the prerogative of citizens and the governments to which citizens delegate these decisions. Researchers can provide information that will allow policy-makers to make better informed decisions. As Weber (1904) put it, an empirical science cannot tell anyone what he *should* do, but rather what he *can* do. The approach to identify different policy options, assess them systematically against multiple objectives, and evaluate their trade-offs does not seem

⁴⁷ Groundwater is not a “pure” common-pool resource, as the possibility to use the resource may depend on the ownership of land. Hence, the non-excludability criterion does not fully apply.

to be a very common approach in the debate about electricity supply to agriculture in India. Therefore, this section provides a brief illustration of such an approach.

11.2.1 Assessing Options against Multiple Criteria

There are various approaches to select the objectives and criteria against which the policy options should be assessed. These objectives and criteria may be derived from general policy statements, or selected in consultation with policy-makers and stakeholders.

Table 17: Assessment of Reform Options against Multiple Criteria: An Illustration of the Approach

	Fiscal sustainability (state) ¹⁾	Farmers' income – general, short term	Small/marginal farmers income short term	Income of farmers who buy water	Food price level (depends on other policy decisions)	Transaction costs S: State U: Utilities F: Farmers	Sustainability of ground-water use (effects very contested!)
Maintaining status quo (Free power, state compensates utilities)	-	+	+	+	- (?)	0	-
<i>Options with implications for electricity and groundwater¹⁾</i>							
Increase of agricultural tariff							
a) without targeting	+	-	-	-	+	0	0 / + ³⁾
b) with targeting	+	-	0 / +	-	+	S/U: +	0 / + ³⁾
c) without metering	+	-	- / 0 / + ²⁾	-	+	0	0
d) with metering	+	-	- / 0 / + ²⁾	-	+	U: +	+
Further restriction of supply							
a) simple reduction of hours	+	-	-	-	+	0	+ ⁵⁾
b) with adjustment to crops ⁴⁾	+	0	0	0 / -	0	U: +	+
Reducing water-intensive crops							
a) using incentives	-	+	+ ⁶⁾	0 / -	0 / + ⁷⁾	S: +	+
b) using restrictions	+	-	-	-	0 / + ⁷⁾	S/U: +	+
Promoting water-saving practices	+	0 / + ⁸⁾	0 / + ⁸⁾	0	0 / -	S/F: +	+
Expanding and/or improving management of surface irrigation	0 / +	- / 0 / + ⁹⁾	- / 0 / + ⁹⁾	- / 0 / + ⁹⁾	0 / -	S: + F: +	+
Regulation of bore wells	+	-	-	-	0 / +	S/F: +	+
State ownership of bore wells ¹⁰⁾	+	-	+	+	0 / +	S/F: +	+
Community-management of groundwater	0	0	+	- / 0 / +	0 / +	F: +	+

Table continued

	Fiscal sustainability (state)	Financial situation of utilities	Farmers' income – general, short term	Small/marginal farmers income short term	Income of farmers who buy water	Food price level (<i>lack of empirical data</i>)	Transaction costs S: State U: Utilities F: Farmers
<i>Options related to electricity without obvious implications for groundwater</i>							
Use of energy-saving devices	+ ¹¹⁾	0	0 / + ⁸⁾	0 / + ⁸⁾	0	0	U/F: +
Reduction of electricity theft	0 / +	+	0	0	0	0	U: +
Increased investment in distribution network, incl. HVDS	0	Short term: -	+ ¹²⁾	+ ¹²⁾	+ ¹²⁾	0	U: -
Improved maintenance of existing network by utilities	0	Short term: -	+ ¹²⁾	+ ¹²⁾	+ ¹²⁾	0	U: +
Decentralization of electricity supply (user cooperatives, etc.)	0	+	0 / +	0 / +	0	0	F: +

Note: “+” = increase “-“= decrease “0” = no effect

- 2) If the government compensates the utilities for the subsidies provided to the farmers, as is currently the case in Andhra Pradesh and Punjab, all options in this category are neutral in their effects on the utilities. However, cross-subsidies exist in both cases. The implications for the affected industries are the similar to that indicated in column one for the state.)
- 3) Effect depends on targeting.
- 4) Effect depends on metering.
- 5) Assuming that targeting to water needs of crops can be done efficiently (effect on transaction costs has to be considered).
- 6) Assuming that farmers do not fully compensate reduction by use of Diesel pumps.
- 7) Depends on the type of incentives.
- 8) Depends on the possibility to compensate decline in food crop production by expansion of production elsewhere, or by imports
- 9) Increase in income only, if volumetric pricing of electricity is introduced.
- 10) Depends on whether reform in surface irrigation is financed by increasing fees for canal water.
- 11) According to the proposal of the Commission on Farmers' Welfare in Andhra Pradesh (State would take over the costs of drilling bore wells sell water from bore wells at the same rate as canal water; small farmers would gain more access).
- 12) Under the assumption that the state compensates the utilities for electricity subsidy to agriculture.
- 13) Assuming that costs of improving quality are not financed by farmers alone (through tariff increase) and that efficiency gains are possible.

Table 18: Assessment of the Political Feasibility of Reform Options

	<i>Material interests</i>					<i>Paradigms</i>			
	Large farmers	Small farmers	Utility Employees	Groups that benefit from theft & corruption	Tax payer in general	Market-oriented	Welfare-state oriented	Community-oriented	
Maintaining status quo (Free power, state compensates utilities)	+	+	+	+	-	-	+		
Increase of agricultural tariff									
<i>Options with implications for electricity and groundwater</i>									
a) without targeting	0 / -	-	-	0	+	+	-		
b) with targeting	0 / -	0 / +	0 / -	0	+	+	+ / 0 / -		
d) with metering	0 / -	0 / -	0 / -	-	+	+	+ / 0 / -		
Further restriction of supply									
a) simple reduction of hours	-	-	0	0	+	0	x		
b) with adjustment to crops	- / 0	- / 0	-	0	+	0	+		
Reducing water-intensive crops									
a) using incentives	0 / +	0 / +	0	0	-	+	+		
b) using restrictions	-	-	0	0	+	-	x		
Promoting water-saving practices	0 / +	0 / +	0	0	0	+	+	+	
Expanding and/or improving management of surface irrigation	+	+	0	+	-	- / 0 / +	+	+	
Regulation of bore wells	-	-	0	+	0 / -	+	+		
State ownership of bore wells ¹⁰⁾	-	- / 0 / +	0	+	-	-	+ / 0 / -	-	
Community-management of groundwater	- / 0	0 / +	0	0	0	0	0	+	

Note: “+” = favor “-“= oppose “0” = neutral; “x” measure accepted as necessary

Table continued

	<i>Material interests</i>					<i>Paradigms</i>		
	Large farmers	Small farmers	Electricity Sector Employees	Groups that benefit from theft & corruption	Tax payer in general	Market-oriented	Welfare-state oriented	Community-oriented
<i>Options related to electricity without obvious implications for groundwater</i>								
Use of energy-saving devices	- / 0	- / 0	- / 0	+	+	+	+	
Increased investment in distribution network, incl. HVDS	+	+	0	+	- / 0	+	+	
Improved maintenance of existing network by utilities	+	+	-	-	+	+	+	
Decentralization of electricity supply (user cooperatives, etc.)	+ / 0	+ / 0	- / 0	-	+	0	0	+
Privatization of electricity sector	-	-	-	- / 0 / +	+	+	-	-
Public sector management reform of electricity sector	+	+	- / 0 / +	-	+	-	+	

Note: “+” = favor “-“= oppose “0” = neutral; “x”= measure accepted as necessary

Criteria may refer to broader policy objectives, such as growth, efficiency, equity, poverty reduction, and environmental sustainability. Practical criteria, such as the transaction costs associated with the implementation of a policy option, may also be considered.

Table 17 represents an illustration of a tentative assessment of the policy options identified in Figure 8 against multiple criteria, including fiscal sustainability; (short-term) effect on the income of farmers in general, and of small and marginalized farmers and farmers who buy groundwater in particular; effect on food prices, as this parameter influences poor households that buy food; and sustainability of groundwater use. The table also includes transaction costs, distinguishing whether it is the state, the electricity utilities and/or the farmers who have to incur the transaction costs involved in implementing the policy measure. One of the criteria is political feasibility. Since this is a major focus of this paper, an analysis of the political feasibility is presented in a separate section (11.2.2).

Interpreting Table 17, one has to keep in mind that the purpose of the table is to illustrate the approach of using multiple criteria for an assessment. To the extent possible, it would be useful to quantify the effects to better understand the trade-offs, but available quantitative studies do cover all criteria. Moreover, one has to take into account that the effects of the different policy options depend on many factors, which cannot all be captured in Table 18 and its footnotes. Moreover, the availability of studies is very limited for some of the criteria. The effects of a certain policy option also depend on policy decisions in other fields. For example, the effect of an increase in the agricultural tariff on the food prices that poor households pay depends on decisions made within the Public Distribution System.

11.2.2 Assessing the Political Feasibility of Policy Options

11.2.2.1 Overview

This section provides an assessment of the political feasibility of different reform options in the present situation, based on the interviews held in the two states. The finding that a policy option is confronted with major political resistance in the present situation does not imply that this option cannot be implemented, at all. Section 11.3 discusses various political strategies that can be used to increase the political feasibility of a policy option. Likewise, the finding that a policy option is easy to implement does not imply that it should be implemented, because it maybe inferior according to other criteria discussed in Section 11.2.1. This section only provides additional information to the assessment of options against multiple criteria highlighted in the previous section.

Approach

The analysis presented in previous chapters suggests that one needs to take both material interests and value- and belief systems (paradigms) into account when assessing the political feasibility of the different reform options. Table 18 presents an assessment of the positions of different interest groups with regard to the reform options identified in Figure 8 based on their material interests. At the same time, Table 18 also shows how different reform options fit to the major belief systems or paradigms (“ideas”) identified in Chapter 10.

Interest groups

The main interest groups considered here are “large farmers”, “small farmers”, the employees of the electricity utilities, groups that benefit from inefficiency, corruption and power theft in the current system, and the tax payers in general. To the extent possible, the position of those groups to the reform options, as presented in Table 18, is based on information collected during the interviews. The distinction between “large farmers” and “small farmers” is, of course, rather general. Moreover, Table 18 represents a stylized picture. As shown in Chapter 10, different farmers’ organizations hold different views on specific options. For example, there are farmers’ organizations that favor metering.

With regard to the “groups who benefit from mismanagement in the current system,” the assessment is based on interviews with key informants and on plausibility considerations. These groups include users with illegal connections as well as contractors and suppliers of equipment for the electricity sector. Small-scale enterprises specialized in repairing burnt-out motors and other equipment also benefit from the current system. Utility staff members, obviously, also benefit from corruption, but they are included here in the group of “electricity sector employees.”

Paradigms

As mentioned above, Table 18 also indicates to which extent a policy option is acceptable or favored by groups that advocate the market-oriented or the welfare state-oriented paradigm. As far as possible, this assessment is based on information derived from the interviews. Since none of the persons interviewed was consistently a strong supporter of the community-based paradigm, it is not known how supporters of this paradigm rank many of the options displayed in Table 18. Therefore, only cells where this position is clear from the interviews or otherwise have been filled in Table 18. Table 18 provides information on the extent to which different interest groups and different paradigms agree or “clash” on a particular reform option. In general, the less “clash” there is on a policy option—both in terms of material interests and in terms of

belief systems—the easier it will be to implement the respective policy option. However, for an analysis of political feasibility it is also necessary to take the strength—or the political capital—of different interest groups into account.

Political capital of different interest groups

As can be derived from Chapters 9 and 10, the farmers have considerable political capital as an interest group, because they represent votes and can organize public protest. Even though they are fragmented and disagree on various aspects of the electricity subsidy (e.g., on whether it should be targeted), they still act in solidarity to argue for improvements in the income situation of agriculture. The utility employees are also well organized and have considerable political capital, as they can go on strike.

The groups that benefit from theft and corruption are not organized in an obvious way, but one can assume that they have close relations with members of the electricity utilities, the public administration and politicians, from which all parties benefit. This may be a major source of their political capital. The tax payers, in general, are not organized as such. This makes it difficult to find advocates for policy options that have a negative impact on fiscal sustainability, but are favorable to certain interest groups otherwise. Environmental groups are not specifically listed in Table 18. One can assume that they are in favor of those measures that (a) lead to more sustainability in groundwater management (see Table 17) and (b) do not contradict the paradigm that the respective groups have, which may be market-oriented, welfare state-oriented or community-oriented. Environmental groups may be an important coalition partner in support of a reform, even though they have played this role so far only to a limited extent.

Role of paradigms

The paradigms are important in their own right as they influence people's policy beliefs and, hence, their political action (see Chapter 10). From an interest group perspective, one has to take into account that there are also interest groups that stand behind these paradigms. International financial institutions and donors, which can use their funding as leverage in the political process, mostly stand behind the market-oriented paradigm. The welfare state-oriented paradigm is supported by an important group of intellectuals, including prominent University teachers and members of prestigious think tanks, who also write widely for the popular press (see Chapter 10). The community-oriented paradigm may have substantial appeal in India as it is consistent with both the welfare-state oriented paradigm and the market-oriented paradigm, but in the context of energy policy and agricultural policy, it seems that

powerful interest groups that support this paradigm have not emerged, so far (see Chapter 10). Based on these general considerations, one can group the different policy options into the following broad categories:

11.2.2.2 Community-oriented policy options with high political feasibility

There are some policy options that fall into the community-oriented paradigm and hence avoid the “clash” between the core beliefs and central political beliefs held by groups belonging to the market-oriented on the one hand and those belonging to the welfare state-oriented paradigm on the other. The interviews suggest that community-oriented policy options, which could also be described as “third-way solutions” (neither “capitalism” nor “socialism”), have a wide acceptance among all interest groups, independent of their predominant paradigm.

Decentralization and devolution of groundwater management and energy supply

Two major policy options that fall under the community-oriented paradigm are decentralizing electricity supply to the local level and promoting community-based water management. As the example of the WENEXA project (Section 11.1.6.3) shows, the two options can also be combined into a community-based energy and water co-management. These options involve their own challenges, such as “community-failure” (local elite capture, inability to overcome collective action problems), but in view of their potential to solve long-standing problems in combination with their relatively high political feasibility, it appears worthwhile to place more emphasis on these options than could be observed, so far, in Andhra Pradesh and Punjab. The option to decentralize electricity supply may involve resistance from groups who gain from current inefficiencies of power supply, but—at least on the argumentative level—a decentralization and devolution strategy is much more difficult to attack politically than a privatization strategy. Moreover, unlike the options discussed in Section 11.3.3.2, these options do not necessarily challenge fiscal sustainability.

Monitoring of electricity quality by independent groups

This option has been described above as a demand-side approach to improving the quality of electricity supply to agriculture, implying that the approach relies on the ability of users to demand better service quality (using, for example, the Citizen Report Card method). The option does not involve obvious obstacles in terms of political feasibility, but it requires collective action by independent farmers’ groups, NGOs and/or consumer groups. As indicated above, the Electricity Regulatory Commissions can support this policy option by demanding that the utilities publish

more detailed and regionally disaggregated statistics on the quality of electricity supply to agriculture to provide more transparency.

Promoting independent farmers' cooperatives for marketing less water-intensive crops

The community-oriented paradigm also has an option to offer with regard to crop diversification. As can be derived from the above synopsis, the promotion of less water-intensive crops is an important strategy to reduce both water and energy consumption. A major challenge of this strategy, however, is the development of marketing channels for these crops. The options promoted under the market-oriented paradigm—contract farming—and the options promoted under the welfare state-oriented paradigm—minimum support price with public procurement—involve a conflict in central policy beliefs. Against this background, promoting independent farmers' cooperatives can be considered as a “third-way” option that may be acceptable to members of all paradigms. However, this strategy requires a change in the state-level cooperative law. Changing this law may provoke resistance from groups associated with the current state-dominated cooperative sector, which would loose from the creation of independent cooperatives.

11.2.2.3 Policy options without major political resistance, but possible budget constraints

Expanding and improving surface water irrigation

There is a range of further options that rank also high with regard to political feasibility, but require public investment. Hence they may be subject to budget constraints or lack of political priority, even though they are not confronted with direct political resistance. Expansion of canal irrigation is one option in this category. In Andhra Pradesh this option is pursued with high priority, while this is not the case in Punjab, probably partly due to limited possibilities for expansion. Improving the management of the existing surface irrigation systems is politically more demanding, especially if improvements are to be financed by user fees, and/or if groups who benefit from current mismanagement are going to loose. As in case of groundwater, reform options that fall under the community-based paradigm may have the highest political feasibility, even though they face the other constraints mentioned above. The introduction of participatory irrigation in Andhra Pradesh (see Section 9.1.3) is an example of a community-oriented reform.

Research and extension

Another policy option that is not likely to face political resistance, but requires public investment, is research and extension. Efforts could focus on (a) reduction of water use in paddy, and (b) increasing the productivity of less water-consuming crops. The technical possibilities to grow paddy with less water and, hence, less electricity, are in fact substantial (Tuong and Bouman, 2003). However, the existing public sector extension system may not have the capacity to promote such practices on a large scale, and extension reform, even though it is now on the political agenda, involves in itself a set of contested policy issues. Moreover, to adopt water-saving cultivation practices, farmers would need more control over electricity than they have now to be able to irrigate exactly when it is most needed (Ringler, personal communication, 2006).

Promotion of less water-intensive crops

Research and extension alone will probably not be sufficient to increase the productivity of less water-intensive crops—especially high value crops—in such a way that they can compete with paddy cultivation, if no other policy changes occur. The policy debate about this issue is particularly important in Punjab. Using incentives for the promotion of less water-intensive crops is a strategy that would avoid political resistance from farmers, but the options proposed by farmers’ organizations, such as introducing a minimum support price for alternative crops, have considerable financial implications for the state and, as noted above, they contradict central policy beliefs of the market-oriented paradigm. Direct income transfers might be more acceptable within the market-oriented paradigm as they can be “de-coupled”, but the budget implications remain a potential constraint.⁴⁸ As indicated above, independent farmers’ cooperatives may represent a “third-way” solution with higher political feasibility.

One also has to take into account that the option to promote other crops, especially in Punjab, involves the issue of food self-sufficiency. This issue, too, involves a clash of central policy beliefs between the proponents of the market-oriented paradigm who believe that food imports are a viable policy option, and all those groups who believe that food self-sufficiency—the major political impetus for the Green Revolution—remains important for India’s political independence. The interviews suggest that this view is not only held by proponents of the welfare state-oriented paradigm, but also by groups who are otherwise associated with the market-oriented paradigm.

⁴⁸ S.S. Johl proposed a model, where savings from the reduction of buffer stocks would be used to finance such income transfers. However, since the buffer stocks have meanwhile been reduced, this option is no longer available.

Regulation of new bore wells

One approach to limit groundwater extraction is to place restrictions on new bore wells in areas where over-extraction of groundwater is a problem. This option is foreseen in the Water Land and Trees Act of Andhra Pradesh. One strategy to enforce this kind of regulation is to make a permit to dig a new bore well a precondition to get a loans from a financial institution. While unpopular with farmers who want to dig new bore wells, the measure as such is not likely to provoke major political resistance, because it does not affect the large majority of farmers who have already established their bore wells. The proposal of the Andhra Pradesh Commission on Farmers' Welfare to bring all bore wells, including those established by the farmers' on their fields, under state ownership is likely to provoke major resistance, even if the farmers are compensated. As highlighted above, the option of community-based groundwater management, as a "third-way solution", is less likely to provoke political resistance.

Promotion of energy-saving technologies

The promotion of energy-saving technologies is, in principle, a win-win option that is not likely to involve major political resistance. Considering that even after a substantial increase of the price paid by farmers, electricity would remain subsidized, the potential to reduce the remaining subsidy by promoting energy-saving technologies is in fact substantial. As mentioned by several interviewed persons, considering all possibilities, energy savings could be in the range of 30 % to 40 %. The proponents of the market-oriented paradigm emphasize that the farmers have no incentives to save energy as long as a free-electricity policy or flat rate is in place. Groups associated with the welfare state-oriented and the community-oriented paradigms consider that other motivations to save energy can be created, too. Moreover, one can use regulatory approaches to promote energy-saving. The strategy in Andhra Pradesh to withdraw the free electricity for farmers who do not install capacitors seems to have worked without major political protest, even though the opposition had tried to make political capital out of it (see Section 9.1.4). Making energy-saving motors compulsory would probably lead to political resistance, as this requires considerable investment. However, depending on the amount of subsidies that can be saved, it would be economic for the state to subsidize energy-saving motors. In this context, it might be useful to systematically analyze the—mixed—experience with schemes in different states that attempted to promote energy-saving motors using incentives.

High Voltage Distribution System (HVDS)

As a technical solution to the problems of electricity theft and voltage fluctuation, HVDS is a policy option that is likely to involve less political resistance than other approaches to these problems. However, as some interview partners emphasized, it is a comparatively expensive option, and more research would be justified to identify under which conditions this option is in fact preferable.⁴⁹

11.2.2.4 Policy options that are confronted with major political challenges

This section discusses the policy options that involve major political challenges. Political processes and strategies, by which these challenges may be overcome, are discussed in Section 11.3.

Increasing the electricity price paid by the farmers in combination with metering

As indicated above, the “first-best” policy option from the perspective of the market-oriented paradigm is to increase the electricity price paid by the farmers in combination with metering. As can be derived from Chapters 9 to 10, this option is confronted with major political challenges. With regard to the *electricity price* paid by farmers, the challenges can be summarized as follows:

(1) *Agricultural income situation*: If introduced without targeted subsidies, this policy option reduces the income of the farmers in a situation that is widely perceived as an agrarian crisis, indicated by increasing income disparities between rural and urban areas, stagnating or declining farm incomes (in real terms), high levels of farmers’ indebtedness, increasing suicide rates of farmers, and specific problems such as the drought in Andhra Pradesh. It is important to note that the interview partners across the political spectrum—even though they used a different terminology when describing the current agricultural situation—emphasized that these problems need to be taken into account when addressing the question of the electricity subsidy.

(2) *Electoral politics*: Political parties have strong incentives to include highly subsidized or free electricity in their election promises, even if they do approve of this method otherwise. Even if parties agree to avoid this measure, it is unclear on how such an agreement could be enforced. Moreover, as the free power policy proved useful in contributing to winning elections in one state, others states were likely to follow.

⁴⁹ The WENEXA pilot project found that HVDS upgrades, even without improvements in tariff structures, typically had a pay back period of two years. According to the WENEXA experience, HVDS virtually eliminated pumpset burnout due to unstable voltage frequency, thus reducing on-farm pumpset maintenance and repair costs, resulting in increased overall income to farmers (USAID, 2005).

(3) *Farmers' perceptions*: Since electricity subsidies were introduced decades ago, farmers now perceive these measures as an entitlement (path-dependency). Moreover, agricultural prices, both input prices and output prices, are very sensitive political parameters in agricultural politics, as the difficulties experienced in other countries (e.g., the European Union) with switching from price support to decoupled support measures (such as direct income transfers) have shown. Moreover, it is important to note that declaring free power has special perception effects: It is perceived as a 100 % reduction of price by the farmer, while the associated increase in subsidy, considering that electricity was highly subsidized before, may be in the range of 20 %.

(4) *Clash in core and central policy beliefs*: The question of whether or not subsidies are justified represents a clash in core beliefs and in central policy beliefs of groups associated with the market-oriented paradigm and those associated with the welfare state-oriented paradigm. As discussed below, targeted subsidies offer a “middle ground” in this regard.

(5) *Transaction costs issues*: Declaring free electricity and waiving arrears of electricity bills are methods by which a state government can increase the farmers' income from one day to another with zero transaction costs of implementation to be incurred either by farmers or the public administration. As one interview partner put it, farmers feel the effect in their pockets the next day. Other methods, such as direct income transfers, require implementation by the public administration. If the utilities are compensated by the government for a free-power policy, as they now are in Andhra Pradesh and Punjab, the utilities save the transaction costs of bill collection, without incurring the negative financial effects of this policy.

With regard to *metering*, the reasons for the political resistance are less straightforward. Since metering was abolished more than a decade ago, the “entitlement” argument and the “path-dependency” argument also apply. In addition, resistance against metering implies a far-reaching *lack of trust*: Farmers assume that metering is only the first step to a price increase. If a free electricity policy is in place, this argument obviously gains additional weight. Unlike the electricity subsidy, metering does *not* involve a clash of core beliefs and central policy beliefs. However, disagreement in *causal beliefs* (regarding the link between volumetric electricity pricing and water consumption) and *factual beliefs* (regarding the relevance of the transaction costs involved in metering) play a role here. The possibility to attribute power theft to agriculture in the absence of metering may also be a political reason not to introduce metering. However, the introduction of metering on a sample basis in both states has already reduced this possibility.

Privatization of the power sector

Privatization of power generation and distribution is widely considered to be the “first-best option” under the market-oriented paradigm. Within this paradigm, it is, however, acknowledged that electricity is subject to the natural monopoly problem. Therefore, regulation is accepted as necessary. The political challenges regarding privatization of the power sector can be summarized as follows:

1) *Clash in core beliefs and central policy beliefs*: The question of privatizing the energy sector is a policy area where groups associated with the market-oriented paradigm and those associated with the welfare state-oriented paradigm clash not only in their central and instrumental policy beliefs, but also in their core belief as to what the role of the state and the market should be. Both sides quote empirical evidence in support of their position, which also points to disagreements in factual and causal beliefs. Proponents of the welfare-oriented paradigm refer to the “Orissa model” as an example of a failed privatization experience (c.f. Dubash and Rajan, 2001). Among other problems, the reform was associated with a neglect of rural electrification and considerable decline in the electricity consumption of poor households (Sihag et al., 2004: 61). Proponents of the market-oriented paradigm quote the experience with power sector reforms in industrialized countries, arguing that increased competition had benefited the consumers there (see e.g., Expert Group, 2003: 21). One may assume that a public sector reform model, which makes use of New Public Management approaches, as currently pursued in Andhra Pradesh, may constitute a “middle ground” between the two positions. However, it appears that this model still runs against a core belief held by proponents of the market-oriented paradigm who argue the public sector in India simply cannot be reformed.⁵⁰

(2) *Interests of electricity sector employees and other groups*: Privatization obviously affects the interests of electricity sector employees as they may lose employment and benefits and change some attitudes towards their work. The case of Andhra Pradesh shows that these concerns can be taken into account in a negotiation process. Political resistance, even though in a less obvious way, may also come from other groups who gain from mismanagement and corruption under the current system.

⁵⁰ An example of this position is report of the Expert Group on Power Reforms in Punjab (2003: 33-34), which states: “If public sector entities could achieve the same level of efficiency, there would be no reason to insist on privatisation. However, experience suggests that there are serious governance problems and perverse incentives affecting the public sector, especially the problem of enforcing discipline on a large work force, and this will make it very difficult to achieve a high level of efficiency within the public sector framework. Besides, even if these standards are achieved through exceptional efforts, they would be very difficult to maintain and the system could easily deteriorate again.”

(3) *Farmers' interests*: In principle, electricity could be supplied at a subsidized rate or free to the agricultural sector even if the energy sector is privatized, if the state compensates the utilities. Still, the private sector may give low priority to the agricultural sector (see also next point). Only one of the interviewed farmers' organizations expressed the opinion that a private sector model would serve their interests better than a public sector model. PGMER (see Section 10) represents an example where farmers' organizations campaigned jointly with electricity sector employees, agricultural laborers and environmental groups against privatization.

(4) *Food security concerns*. The empirical evidence reported in Chapter 10 suggests that under the current system, political decision-makers in Punjab and Andhra Pradesh can—and in fact do—instruct the utilities to give priority to agricultural supply in critical phases of crop production, including in drought periods. Considering that more than 50 % of India's food crops are produced with groundwater irrigation (Dubash, 2005), the possibility to direct electricity supply to crop production in critical phases is not only in the interest of farmers, it also has strategic importance with regard to food security. Since the possibilities to exercise political influence on priorities of distribution of electricity are obviously more limited in a privatized model, this is a highly relevant argument for those groups who believe in food self-sufficiency as a political goal (see above).

Part IV: Political Strategies for Policy Reform

12 Political Strategies for Policy Reform

This chapter deals with political strategies that could be pursued to promote policy reforms regarding fertilizer and electricity supply to agriculture that are confronted with major political challenges. As Chapter 7 has shown, in case of fertilizer supply, there are only a couple of technical methods for addressing NPK imbalance that will not face any potential political resistance. In case of electricity supply, there is a range of policy options to address major problems that may not face major political resistance, as outlined in Chapter 11. In both cases, several strategies may be used to overcome the political challenges of those policy options that are confronted with political resistance. Before discussing those strategies in the following sections, it needs to be emphasized that, as already pointed out above, this study does *not* take a normative position as to which reform options *should* be pursued using these strategies, since this choice involves value judgments that need to be made by citizens and the governments they elect. Moreover, one needs to keep in mind that the choice of a political strategy also involves value judgments. There are normative reasons to prefer, for example, deliberative democracy methods to a stealthy gradualism approach.

12.1 Stealthy gradualism

As indicated in Section 2.1, it is widely accepted among political analysts that the economic reforms, especially in the early phase, were possible because they were pursued—with considerable political skills—by “stealthy gradualism,” that is below the radar screen of public attention. As also noted in Section 2, this reform option is not available for “Phase 2” reforms of the power sector, such as unbundling and control of power theft, as they inevitably affect large numbers of employees and consumers.

Likewise, the approach of “stealthy gradualism” is not available for increasing the farmgate price of fertilizer or for removing the free power policy and/or for introducing metering on a general scale, because this would affect inevitably a considerable share of the farmers. However, the approach could be used for certain elements of a reform, for example, the introduction of targeting. For the case of electricity, it appears that the removal of the free power policy for the better-off farmers in Andhra Pradesh corresponds to this strategy. Since the measure applies to

only five percent of the farmers, it was apparently possible to introduce it without major resistance. A number of interview partners in Andhra Pradesh were, in fact, of the opinion that power is still free for all farmers, which indicates that the measure did not receive wide publicity. Likewise, since it clearly affects only the better-off farmers, it is not a measure which the opposition could easily attack to create political capital. It might well be feasible to gradually increase the percentage of farmers who have to pay for electricity, especially if this increase is linked to an improvement of the overall income situation of the farmers, and/or an improvement in electricity quality.

12.2 Strong political leadership

The literature on reforms cites strong political leadership as being closely associated with successful policy change (Haggard and Williamson 1993). As the interviews suggest, it is also a wide-spread perception—especially among proponents of the market-oriented paradigm—that all what is required to pursue “unpopular” reforms is strong political leadership or “political will.”

In case of fertilizer policy, it is political leadership at the central level that matters. The analysis presented here showed that despite the fact that the Ministry of Finance enjoys a position of primacy among bureaucracies, it has not been able to command support for its position on fertilizer policy reduction and rationalization. This suggests that the issue would require the weight of the Prime Minister’s Office as well as support from the leader of the ruling party and the coalition who are in a better position than the Finance Minister to forge support within the party and within the coalition through deliberation and offering side-payments. While Prime Minister Vajpayee was considered reform-minded, neither he nor the BJP leadership made subsidy rationalization and reduction a priority. In fact, faced with opposition from coalition members and chief ministers of states, Vajpayee decided to refer the fertilizer policy issue to a group of ministers who were unable to take any decisive action. Since any initiative for reforming the policy framework for production of fertilizer has to come from the Ministry of Chemicals and Fertilizers, the role of the minister in that ministry is extremely crucial to successful policy reform. Initiative on and commitment to policy change under Suresh Prabhu during 1999-2000 did indeed push the reform process along before Prabhu was reassigned to the Ministry of Power.

In case of electricity reforms, Andhra Pradesh’s former Chief Minister Chandrababu Naidu is an interesting case. From the perspective of the market-oriented paradigm, he is widely considered as an example of a strong political leader who was prepared to

pursue reforms, including unpopular reforms, in the wider public interest. The fact that Naidu lost the 2004 elections by a large margin is not necessarily a proof that this strategy does not work at all. As outlined in Section 9.1.3, Naidu won the 1999 elections, even though he had already started a widely publicized reform agenda and even though he did not adopt the “free power” election promise that the Congress Party had put forward.

Naidu’s case is rather an example that “reform by strong political leadership”, while not impossible, requires considerable political judgment and skills. The tariff increase pursued by Naidu in 2000 (see Section 9.3.1) can be interpreted as an example of serious political misjudgment. According to some interview partners, Naidu’s advisors had convinced him that the tariff increases would be acceptable, taking into consideration that even after the increase, the tariff rates were still low as compared to other states. Moreover, the amount of capital that farmers invest in digging bore wells, or in operating Diesel pumps, implied in his opinion that farmers who actually own pumps would be able to afford this tariff increase. However, what eventually counted for the political process was the *relative* price increase, which was substantial, a fact that the opposition could easily capitalize on. Moreover—a point stressed by several interview partners—the timing for the tariff increase was particularly unfortunate, because the farmers were affected by a drought.

As some of the interviewed political analysts remarked, political leaders and parties differ considerably in their ability and their approaches to have an “ear on the ground.” The approaches that parties and political leaders use include (a) close contact with the electorate “to feel it out”, (b) use of Party structures to get feed-back from the grass-roots level, and (c) more “scientific” methods such as issuing opinion surveys. Whatever approach is used, having “an ear on the ground” seems to be an important prerequisite to pursue a “strong political leadership” strategy successfully.

12.3 Packaging, timing and sequencing

One reform strategy that can be used to make “unpopular” reforms more acceptable is “packaging” the reform with “popular” measures, such as, for example, improved access to agricultural credit or new technologies. In fact, packaging, timing and sequencing of reforms find strong support in the literature on reforms (Nelson 1989, Haggard and Kaufman 1992).

In case of reforms affecting fertilizer producers, however, there is little by way of packaging that can mitigate the negative perception attached to it. In case of farmgate pricing, the government could suggest improving the declining trend in public

investment in agriculture by channeling savings on the subsidy bill into such investments. In the past, farmers have rejected such packaging arguing that increases in public investment should go alongside existing fertilizer price. Moreover, there is a time lag between public investments and their effect on increased farm incomes, which may be considerable. Vashishtha et.al. (2006) suggest sequencing a rise in farmgate price with introduction of technology, which can be supported by the savings from the subsidy bill. This type of packaging and sequencing is likely to be more successful if the research and knowledge underlying the policy prescriptions are communicated to stakeholders, i.e. farm leaders and members of parliament in a convincing way. It is necessary to communicate that higher urea use and lower urea prices do not add up in a simple fashion to better food security for the country.

In case of electricity supply to agriculture, it is also quite challenging to identify policy measures that would—from the perspective of the farmers—offset the income losses of removing free power without imposing a similar burden on the state. As in case of fertilizer, “packaging” of electricity reforms requires a convincing communication strategy, as the opposition may always attack the unpopular elements of the package, while downplaying the popular elements.

Sequencing of reforms could also be an important strategy to overcome political resistance against reforms of electricity pricing. In this policy field, the sequencing issue that has in fact been widely discussed with regard the “chicken and egg” problem of increasing the electricity price and increasing quality of supply. Obviously, improving the quality of supply first makes price increases more acceptable. However, in addition to the fiscal challenges involved in this sequence, the approach may still require a strong communication strategy that clearly links measurable improvements in quality with future price increases. As indicated above (see Section 11.1.2), the utilities could also make the price dependent on the quality that the farmers in fact receive to create this link.

The timing of reforms also plays an important role in overcoming political resistance. As indicated in Section 3.1, Kingdon’s (1984) approach can be used to identify “policy windows” or “windows of opportunity”. According to this approach, three conditions are essential for a policy change to happen: the problem pressure has to be sufficiently high (“problem stream”), a widely accepted policy solution needs to be available (“policy stream”), and the political situation needs to be conducive for the change (“politics stream”). Policy brokers or political entrepreneurs may play an important role in making policy change happen when a window of opportunity arises (“coupling of the three streams”).

In case of fertilizer, a fiscal crisis, a crisis in the farm sector and impending trade liberalization applied sufficient problem pressure on stakeholders to act in 1999-2000, but a clear accepted alternative vision of policy was not available and therefore, the Finance Minister was not able to change policy. In fact, an accepted alternative policy is still not available and a substantial amount of energy needs to be expended in coming up with such an alternative. This suggests that there is a need to suggest alternatives through research and knowledge-building as well a need to create more support for new alternatives through deliberation (see below).

In case of electricity, the tariff increase in Andhra Pradesh in 2000 is an example where a reform was pursued even though only one of the three conditions was met. Since Naidu won the elections on a pro-reform platform, the political conditions were suitable for reform efforts. However, fiscal stress—the problem that this reform measure intended to address—was not what citizens perceived to be the major problem. For the farmers, the major problem was their declining income, aggravated by the drought. Moreover, the proposed policy solution—tariff increases without any link to quality improvements—was not very convincing for obvious reasons. Trying to reach a consensus on what a policy solution would look like may be an important condition for policy change so that windows of opportunities can be used more effectively, when the other conditions (problem pressure and political situation) are met. Moreover, to learn more about “windows of opportunity” for reducing agricultural subsidies, it might be useful to study cases where such subsidies were, in fact, reduced or abolished. One could look at other countries, but for comparability, these should also be democracies where farmers have voice.

12.4 Building new coalitions

Building new coalitions of interest groups can play an important role in overcoming the political challenges of a policy reform. The People’s Monitoring Group on Electricity Regulation in Andhra Pradesh is an interesting example of a “new coalition” which brings together farmers, farm laborers, electricity sector employees and environmental groups. The example indicates that new coalitions are easier to form among groups that share the same paradigm, even though they may differ in their material interests. It appears that the proponents of a reform that focuses on fertilizer price increase or agricultural tariff increase have not been successful in forming a coalition with environmental groups, which may be partly due to differences in core beliefs. Research may play an important role for creating new coalitions by making

potential interest groups aware of the way in which they are affected by the current situation, and how they would be affected by a proposed policy change.

12.5 Shifting the political discourse

Some policy options, especially the move towards targeting of subsidies in case of both fertilizer and electricity, could be promoted more easily, if a shift in the policy discourse can be achieved. At present, the dominant policy discourse of “agrarian distress” focuses on the intersectoral income disparity between the agricultural and the non-agricultural sector. The wide difference in growth rates between the agricultural and the non-agricultural sector and the issue of farmers’ suicides promote this discourse. The “agrarian distress” discourse does not, however, focus on a differentiation among different groups in the agricultural sector. Hence, the current “agrarian distress” discourse provides a strong justification for general intersectoral income redistribution rather than targeted income transfers. A move towards targeted subsidies would be easier, if the public discourse focused more explicitly on the problems of small and marginal farmers, on farmers without access to irrigation and modern technologies, and on agricultural laborers, rather than on the agricultural sector, in general. The challenge is, of course, to identify strategies by which the public discourse can be changed. Proponents of electricity and fertilizer reforms have in fact always highlighted the distributional issue. Yet, it appears that the proponents of the market-oriented paradigm have not been able to establish a credible position in the public debate on either electricity or fertilizer policy that a genuine concern for the poorer sections within the agricultural sector is a major rationale for their reform proposals.

12.6 Strategic bargaining

“Strategic bargaining” is a political strategy that involves negotiations with those groups that are expected to loose from a proposed policy change. The term “strategic bargaining” refers to a type of negotiation that—in line with the principles of neo-classical economics—assumes that the parties involved have fixed preferences and take only their own interests into account. As outlined in Section 12.6 below, an alternative negotiation approach is “deliberation”, which assumes that self-interest is not the only motivation people have. In practice, negotiation approaches may have both elements, but to illustrate the differences, they are considered separately here. The strategic bargaining approach is typical for negotiations between labor unions and employers. A good example of this approach is the tri-partite agreement in Andhra

Pradesh signed between the labor unions representing the electricity sector employees, the government and the State Electricity Board. The agreement protected the interests of the electricity sector employees in terms of their job security, salaries and benefits. This agreement alone does not, however, explain why the power sector reform in Andhra Pradesh was possible. The reform also affected groups that were not represented at the negotiation table, e.g., the industrialists and households benefiting from power theft. Hence, an element of “strong leadership” was still important in addition to using a negotiation approach.

Strategic bargaining may also be used between the government and the fertilizer industry. A credible bargaining with the fertilizer industry could be promoted if a) the government shows a more united face to the industry, b) in its own thinking and writing, it de-links food security from self-sufficiency in fertilizer production. The industry is a body of a small number of actors with very specific material interests – if it is convinced that the government is serious about reform and is even willing to consider a larger dependence on imports, the industry will likely negotiate to get the best deal it can obtain.

A bargaining approach appears less applicable with regard to the farmgate price of fertilizer and the agricultural electricity tariff and metering. Unlike the fertilizer and electricity producers, the farmers are a large and heterogeneous group. Moreover, farmers’ organizations do not represent the farmers in the same way than labor unions represent the employees, because the farmers’ organizations are rather fragmented, and not all of them have a registered membership. Unlike the electricity employees, the farmers are not in a contractual relationship with the state, hence any “deal” would require considerable trust on part of the farmers. Another approach for the government would be to negotiate with Members of Parliament (in case of fertilizer) or Members of the State Legislative Assembly, respectively.

In case of the farmers’ organizations, it is not clear whether they would be willing to engage in a negotiated approach for either fertilizer or electricity pricing, at all. According to theory of strategic bargaining, possible participants typically consider their “Best Alternative to Negotiated Agreement” (BATNA) (Fisher and Ury, 1983). In case of the utility employees in Andhra Pradesh, the incentives to arrive at a negotiated solution were quite high, as there was a credible threat that the government would pursue the reforms in any case. Creating a “credible threat” regarding fertilizer pricing and regarding electricity pricing and metering appears more difficult, especially in the current situation. In case of electricity, this might, in fact, require a strategic bargaining between political parties with the aim to refrain from the election promise to make electricity free. However, it is unclear how such a “deal” could be

enforced. None of the agreements on electricity pricing for agriculture made at the central level proved to be enforceable, so far. Even within the Congress Party, the position to avoid a free electricity policy could not be enforced.⁵¹

12.7 Deliberative democracy

As indicated above, an alternative model to self-interested “strategic bargaining” is “deliberation”. Deliberation can be defined as “an approach to decision-making in which citizens consider relevant facts from multiple points of view, converse with one another to think critically about options before them and enlarge their perspectives, opinions, and understandings.”⁵² The concept of deliberation rejects the assumption that people only act strategically to pursue their own interests. However, as Fung and Wright (2001: 19) point out:

“The ideal does not require participants to be altruistic or to converge upon a consensus of value and strategy, or perspective. Real-world deliberations are often characterized by heated conflict, winners, and losers. The important feature of genuine deliberation is that participants find reasons that they can accept in collective actions, not necessarily that they completely endorse the action or find it maximally advantageous.”

In terms of the framework used in this paper, deliberation aims at a consensus for practical action, without requiring a consensus in core beliefs or central policy beliefs. The concept of deliberation is closely associated with Habermas’ (1981) theory of communicative action and rational discourse, which emphasizes mutual understanding. The idea of deliberation has gained attention during the last decade in the debate about “deliberative democracy,”⁵³ an attempt to overcome some of the limitations of representative democracy by promoting civic engagement and public participation. A wide range of methods has been developed, by which deliberation can be practiced, ranging from “citizen juries” involving small groups of ten or twelve people to participatory events involving several thousand people who deliberate

⁵¹ In 2002, Congress Party leader Sonia Gandhi tried to convince state party leaders to refrain from the free-power policy. As Sharad Joshi noted in a newspaper article: “She has started addressing letters to her Chief ministers on the lines of those her grand father-in-law used so often and with great effect. Mrs. Sonia Gandhi has sent a missive to her Chief Ministers urging them to desist from freeing electricity for farmers. It is a bold step and serious rebuff to the populist policies followed by the Badals, the Chautalas and the NTRs.” (Joshi, 2002).

⁵² See <http://www.deliberative-democracy.net/deliberation/>.

⁵³ Proponents of deliberative democracy argue that the institutional forms of representative democracy and techno-bureaucratic administration developed in the 19th century are increasingly ill-suited to solve the problems societies face in the twenty-first century (c.f. Fung and Wright, 2001).

assisted by modern communication technologies (see Gastil and Levine, 2005, for a compilation of different methods). Deliberative approaches have been used in a variety of settings, including environmental mediation, ex-ante technology impact assessment, and city planning and budgeting. Table 19 presents a set of rules that are derived from Habermas' rational discourse approach and can serve as guidelines for deliberative processes.

Approaches of deliberative democracy may have a considerable potential to overcome the long-standing problems associated with the fertilizer and electricity supply to agriculture in India. It would require further analysis to identify which of the different deliberative approaches that have been developed in various fields would be most suitable. Such efforts could draw on the rich experience of deliberative approaches in environmental mediation, conflict resolution and other fields. Likewise, it would be necessary to identify organizations have, or could develop, the skills and expertise to convene deliberative processes on the topic of electricity supply to agriculture. Organizations that are strongly associated with either the market-oriented or the state-oriented paradigm may not be well-suited for the purpose. In case of electricity, , the Electricity Regulatory Commissions may be important institutions where deliberative processes could be established, because the Commissions already have the mandate to promote public participation.

Table 19: Principles for Consensus-Oriented Deliberation Processes

Clear Mandate	The questions to be answered by the participants, their tasks as well as competences must be defined and accepted at the beginning.
Timing	A clear time plan allows all participants to define and accept their input. The time must be sufficient to discuss the relevant topics without time pressure.
Equal Rights and Duties	All participants are put on the same level during the discourse activities. Hierarchic structures, competences and power relationships outside the discourse are no reasons for privileges or specific rights during the activities.
Rationality	Emotional arguments as well as moral statements about the positions of other participants often block consensus arrangements. Therefore, such statements should be avoided and transformed into discussible arguments.
Feed-back	Interim as well as final results must be distributed among the participants as well as made available to the public since the transparency of the approach is an important element of its legitimation. In addition, there should be an agreement who are the target groups for the results as well as the mode of transmission at the beginning of discourse activities.

Source: Beckmann and Keck (1999), quoted in Gaisser et al. (2002: 7)

12.8 Use of research-based knowledge to promote policy-oriented learning across discourse coalitions

12.8.1 Understanding policy-oriented learning

The use of research-based knowledge can play an important role in all political strategies that aim at resolving the problems associated with the electricity supply to agriculture. Research-based knowledge can contribute to what Jenkins-Smith and Sabatier (1993) call “policy-oriented learning”, that is a gradual change in belief-systems which is often a pre-condition for policy-change to occur. Drawing on the Advocacy Coalition Framework, the authors distinguish between policy-oriented learning within and across coalitions with different belief-systems. As can be derived from the previous analysis, it is policy-oriented learning *across* groups with different belief-systems that is important to make policy change happen with regard to both fertilizer and electricity policy. In case of electricity policy, as explained in Chapter 10, groups associated with different paradigms differ not only in their core beliefs and their central policy beliefs, but also in their factual and causal beliefs. While core and central policy beliefs are difficult to change, research-based knowledge can play an important role in promoting agreement on facts and causal mechanisms. Likewise, research can be useful to promote agreement about instrumental policy beliefs, which refer to technical aspects of a policy.

To understand the role of research-based knowledge in the political process, it is important to take the conditions and dynamics of policy-oriented learning into account. A single study produced by the proponents of one particular paradigm will not usually convince proponents of a different paradigm, even if this study presents “only facts” in the view of those who conducted or commissioned it. As Jenkins-Smith and Sabatier (1993: 47) point out, “‘knowledge’ does not suddenly appear, become universally accepted, and suggest unequivocal changes in government action programs.” Policy-oriented learning is a more complicated process. The research by Jenkins-Smith and Sabatier (1993: 45-55) has led to the following insights and hypotheses in this regard:

- (1) Research is often stimulated by opportunities to realize core values, or by threats to the achievement of core values.
- (2) An important motivation to carry out research is to alert people to which extent a given situation affects their interests and values.
- (3) Once political actors have developed a position on a particular policy issue, they typically use research-based knowledge in an “advocacy” fashion, i.e. to justify and elaborate that position.
- (4) Groups that disagree with a proposed policy solution because it affects their interests and/or their beliefs and values can use number of strategies in dealing with studies that support this policy solution, including (a) challenging the validity of the data concerning the seriousness of the problem, (b) challenging the validity of the analysis including the methods used; and (c) challenging the efficacy of the technical, economic and institutional arrangements proposed to solve the problem. An *analytical debate* between groups associated with different belief-systems is important to promote consensus on these questions.
- (5) To which extent and in which time frame policy-learning *across* groups with different belief-systems can take place, depends on the level of conflict, the analytical tractability of the problem, and the nature of the analytical forum.
 - *Level of conflict*: In cases of intense conflict, where core beliefs and values are at stake, the use of analysis is most likely to be employed as a political resource. Policy-oriented learning is a challenge in this situation.
 - *Analytical tractability*: Policy-oriented learning is more difficult, when the focus of the analysis is on complex phenomena, when causal relationships span several policy areas, and when the issue concerns conflicting policy objectives.

In general, problems involving natural systems are more conducive to policy-oriented learning than those involving purely social and economic systems.

- *Nature of the analytical forum:* The term “analytical forum” refers to the locus or institution where discussions about research-based knowledge take place. They include advisory committees, conferences and journals of professional groups and temporary groupings such as “science courts.” Policy-oriented learning is more likely to take place in fora that are dominated by professional norms and that are prestigious enough to attract researchers belonging to different belief systems.

12.8.2 Implications for fertilizer and electricity supply to agriculture

Even though the points mentioned in the previous section are based on case studies and have the character of hypotheses, they can provide important clues for a better use of knowledge to solve the problems surrounding the electricity supply to agriculture. In general, the possibilities to use research-based knowledge to promote policy-oriented learning are rather favorable in India, and for the progress that has been made, research-based knowledge has without doubt played an important role. Compared to other countries with similar income levels, the research capacity in India is well developed, there is strong tradition in analytical debates, and in using research-based knowledge for policy advice. In fact, a number of academic organizations and think tanks at the state and central level have been conducting research on various issues related to the energy supply to agriculture. Likewise, there are well-established professional fora where analytical debates are taking place. The journal *Economic and Political Weekly*, as a prime example, has published a wide range of articles and commentaries related to the electricity supply to agriculture, written by authors associated with different paradigms. Moreover, temporary and institutionalized commissions, which bring together leading researchers, play an important role in providing policy advice in India.

However, in spite of these advantages, fertilizer and electricity supply to agriculture are challenging fields for policy-oriented learning. As can be derived from the analysis, these are fields where the level of conflict is high and where core and central policy beliefs are at stake. Moreover, the analytical tractability of some of the major relevant questions is not very high. For example, the link between electricity price and groundwater level is rather complex, considering that there is a range of factors that influence farmers’ decisions on crop choice and groundwater use. Moreover, groundwater extraction is only one factor determining groundwater levels. There is also evidence that the knowledge and research that informed policymaking during the

Green Revolution has not been replaced by newer ideas that address the more current problems facing Indian agriculture within the context of changed economic and political circumstances. This is not to suggest that new research and new knowledge does not exist – the problem is that they exist in piecemeal fashion and have not been communicated in a way that would promote an alternative discourse.

In view of these challenges, the following measures may improve the use of research-based knowledge for policy-oriented learning:

1) Establishing a “clearing house” for research-based knowledge

Even though there is a large number of studies related both fertilizer subsidies and nutrient imbalances as well as electricity subsidies, groundwater use and power sector reforms, this information is largely fragmented and not easy to access quickly, because the studies have been carried out in various states and by various national-level research institutions over a period of more than a decade. Likewise, the experiments and projects to which such studies may refer have been carried out in different states and at different points in time. As an example for the difficulties in accessing existing information, according to an interviewed member of the Central Groundwater Board, not even this institution has easy access to studies that have empirically investigated the link between electricity pricing and groundwater use. While the number of existing studies on this issue may be limited, it would be useful if the existing studies could, at least, be accessed more easily. One option to improve access to existing research-based knowledge is to identify an institution that is considered to be sufficiently independent and neutral set up a website (“clearing house” or “digital library”) where the available studies can be accessed in a user-friendly way (searchable by key words, themes and states). If copy-rights do not make it possible to place certain studies on the website, references and abstracts could be provided instead.

2) Focus of new research contested issues for which empirical analysis is lacking

The establishment of a “clearing house” would help to identify those areas of research where major research gaps and open questions exist. New research activities could then place a strong focus on those areas. For example, the research reviewed for this study suggests that there is already substantial research documenting that large farmers benefit more from the fertilizer and electricity subsidies than small farmers, if one considers only the direct effects. However, studies that take indirect effects into account, or that evaluate the effect of fertilizer and electricity subsidies on food prices, are less frequent. Likewise, not much research exists that empirically estimates the consequences of a small rise in the farmgate price of urea. In the case of electricity, there is a lack of studies that analyze the link between electricity pricing and

groundwater use in a methodologically rigorous way, even though this question is central to the debate on electricity supply to agriculture. So far, representative studies based on farm household data that evaluate water use efficiency under different electricity pricing mechanisms, (e.g., by using stochastic production frontier functions) and that take the effect on farmers' crop choices into account (e.g., by using linear programming methods) are either scarce or difficult to access. Considering that a substantial proportion of stakeholders (see Chapter 10) do not believe that the link between electricity price and groundwater use is very strong, more empirical research on the issue would be justified. Another area where more empirical research seems justified is the question of transaction costs, especially since the transaction costs argument plays such an important role in the debate on metering. Since there are metered connections for agricultural pump sets in India, empirical studies on the transaction costs involved are possible.⁵⁴

3) Making research more demand-driven

Since research on questions associated with the electricity supply to agriculture is often produced and used “in an advocacy fashion”, such research often focuses on those aspects that the proponents of a particular policy option consider most important. However, if deliberative processes that bring groups with different belief-systems together are in place, a demand for new research-based knowledge may emerge from such deliberations. Just to give a hypothetical example, the participants of such a deliberative forum may want to know more about the impact of increasing agricultural tariffs on households that buy groundwater and on agricultural laborers. Research on this question could then be commissioned to institutions in which groups with different belief-systems trust. Research that is based on a real “demand” for the respective knowledge is more likely to address the issues different stakeholders care about, and to be used in the political process.

4) Making research-based knowledge more accessible to legislators

An important challenge regarding the use of research-based knowledge is the fact that the institutional mechanisms for making policy relevant knowledge available to Indian legislators are rather limited, both at the central and state levels. There is, for example, nothing similar to a Congressional Research Service and Indian MPs or MLAs do not have large legislative staffs to read, summarize and present to them debates on policy

⁵⁴ Some researchers believe that it is not possible to empirically measure transaction costs. However, this is not the case. See, e.g., Mburu et al. (2003).

issues.⁵⁵ MPs and MLAs learn about the most pressing problems from their constituents. They receive policy advice on agricultural issues from a variety of sources but primarily from non-governmental organizations, such as environmental NGOs.⁵⁶ Farmers groups also receive policy advice from NGOs. While the quality of the policy advice given by NGOs maybe high, they may not represent the entire spectrum of available knowledge. More recently, apex business associations are playing a role in informing MPs and MLAs on policy issues. However, there is a certain amount of self-selection in research and knowledge provided by interest groups. Once there is adequate dissemination of policy-relevant knowledge, legislators would be better able to consider more options before adopting a policy option.

5) Promoting analytical debates

Research on issues related to the fertilizer and electricity supply to agriculture has, so far, often been used in an “advocacy fashion.” Considering that it is a topic where core and central policy beliefs are at stake, this observation is well in line with hypotheses summarized above. Promoting analytical debates, which focus on reviewing the data basis, the analytical methods and the assumptions of studies that are used to advocate a particular position would help to make better use of research-based knowledge in the debate and to promote consensus and evidence-based decision-making. For example, the World Bank study on the power supply to agriculture in Andhra Pradesh and Haryana (2001b) presented a model simulation (called “accelerated reform scenario,” covering a period of six years), according to which the income of small and marginal farmers would increase by 100 % to 120 % due to increased quality of electricity supply. In this scenario, farmers face an increase in electricity price of approximately 470 %. Considering that many observers find such a result rather unrealistic, an analytical debate on the methodology and assumptions of this scenario would be required to reduce disagreement about such findings. To give another example, an analytical debate would be useful to clarify why available studies differ in their results on farmers’ willingness to pay for electricity.

6) More diversity in analytical fora

As indicated above, there is a range of analytical fora (commissions, journals, professional associations) that are prestigious and attract leading researchers. However, not all of these fora are in themselves diverse and include researchers associated with different value- and belief systems. In particular, there seems to be a

⁵⁵ Interviews with Members of Parliament and MLAs in August 2006.

⁵⁶ Interviews with farm leaders in 2005 and 2006.

tendency that governments set up temporary commissions for specific purposes in such a way that the commissions support only one position or paradigm (see, e.g., Expert Group, 2003). Hence, in order to promote policy-oriented learning across groups with different belief-systems, it would be useful to promote fora where leading researchers associated with different paradigms meet and resolve analytical debates.

13 Concluding Remarks

This report has analyzed why political solutions to the problems of fertilizer supply and to the “electricity-groundwater conundrum” have hardly emerged after more than a decade of reform efforts.

In case of fertilizer supply, the study concentrated on the question as to why the Government of India has not been able to reduce and/or better target the fertilizer subsidy despite several attempts in that direction. The study has shown that the ability to raise farmgate prices is constrained by coalition politics and by political representatives of owners of medium and large farms. The government has also not been able to target the subsidies more narrowly on small and marginal farmers due to opposition from owners of medium and large farms and due to logistical problems perceived to be associated with it. The study also showed that the policy framework for production and distribution of fertilizers has not been reformed because of the presence of a strong coalition consisting of the fertilizer industry, the Ministries of Chemicals and Fertilizer as well as Agriculture which has successfully argued that policy reform would negatively affect India’s self-sufficiency in fertilizer production and through it, India’s food security. The advocates for change in policy are fewer and less articulate and consistent in their message. Finally, the reform has been stymied by the inadequate supply of natural gas in India.

In case of electricity supply to agriculture, the analysis presented here also suggests that similar explanatory perspectives that focus on material interests as drivers of political processes go a long way in explaining the current situation. However, as in case of fertilizer, these explanatory approaches miss one important dimension of the problem. The long-standing and unresolved problems associated with fertilizer and electricity supply to agriculture are not only due to entrenched interests, path-dependent developments and electoral and bureaucratic politics, they are also due to a clash of two value- and belief systems that are important in Indian politics: On the one side of the spectrum are those who believe that the market forces will provide the ultimate solution to both the economic and the environmental problems associated with the fertilizer and electricity supply to agriculture, and that state intervention—in

view of inherent state failure—should be limited to a minimum. On the other end of the spectrum are those who believe that it is necessary for the state to play an active role in protecting both the farmers and the environment and in promoting food self-sufficiency. Both groups have a positive self-representation, as defenders of the “public interest,” or advocates of “the poor and disadvantaged”, and a negative other-representation, accusing each other as “neo-liberals” or “populists.” Efforts to bridge the gaps between groups associated with different material interests and different value- and belief systems have remained limited, and researchers have typically taken one or the other side. The report has shown that in case of electricity supply, there is a wide range of policy options that would help to overcome the economic, distributional and environmental problems associated with the electricity supply to agriculture. Of course, not all these solutions are what the proponents of the market-oriented paradigm consider “first best.” However, many of these options may be quite effective, and a number of them do not involve major political resistance. In particular, community-oriented solutions, such as decentralization and devolution are promising “third-way” options (between “state” and “market” or “socialism” and “capitalism”). In case of fertilizer, the availability of policy options that do not involve major political resistance turned out to be more limited. The report has also shown that there is a range of political strategies that could be used to promote policy change regarding both fertilizer and electricity policy, including methods of deliberative democracy, and a better use of research-based knowledge to promote policy-oriented learning. It is the hope of the authors that some of the considerations presented in the report will be useful for stakeholders and policy-makers associated with different value- and belief system to find solutions for the common good.

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Annex 1: Background Information on Electricity Reform

Table A - 1: Chronology of Electricity Reforms in India

Year	Important events of reforms
1948	Electricity Supply Act brought all new generation, transmission, and distribution facilities within state's purview.
1991	Electricity Laws (Amendment) Act allows private sector participation in generation, with foreign investors allowed 100 percent ownership.
1992-1997	Eight projects given fast track approval and sovereign guarantees by the central government.
1995	Orissa Electricity Reform Act Established the Orissa Electricity Regulatory Commission and provided the unbundling of the Orissa State Electricity Board.
1996	Chief Minister's conference formulated a common minimum Action Plan for the electricity.
1997	World Bank Haryana Power Sector restructuring project approved, and Haryana state passes the Haryana Electricity Reform Act.
1998	Electricity Regulatory Commissions Ordinance Notification provides for the establishment of a Central Regulatory Commission and state level Electricity regulatory Commissions
1999-2001	Andhra Pradesh, Karnataka and Uttar Pradesh proceed with the preparation of the Electricity Reforms Acts. The World Bank Prepares and approves projects supporting reforms in each states
2001	Energy Conservation Bill Passed by the Parliament
2000-2002	Draft Central Government Electricity Bill Prepared and Introduced in the Parliament
2003	Electricity Act passed in Parliament

Source: Dubash and Rajan (2001), amended

Box A - 1: Important Features of the Electricity Act 2003

1. Setting up Captive generation does not need permission. Captive generation can be set up by a group or society to meet their needs. The captive plants can be located off-site (far from the consumption point)
2. Transmission utility at the central level will continue to hold responsibility of co-ordinating planning of the transmission network. These utilities or the State governments would look after load dispatch (scheduling of plants, maintenance etc).
3. Private companies can build Transmission lines for captive use or for common use
4. Open Access: Any generating station will get access to the transmission system at a fee, subject to capacity availability. They will have to pay a fee to the transmission utility (called wheeling charge) and charges for load dispatch centre. Bulk consumers including DISCOMS can take advantage of Open access by purchasing the wheeled power. Large consumers will have to pay a surcharge to cover cross subsidy, except in case of the captive generating stations. The State Regulatory Commission may permit Open access in distribution in phases and can levy a surcharge on users buying power through open access. This will be utilised to cover cross subsidy in that area.
5. Distribution licensees are free to undertake generation and generation companies are free to undertake distribution license.
6. For rural and remote areas, stand alone systems for generation and distribution are allowed. Distribution managed through Panchayats, User associations, Co-operatives or Franchises would also be permitted without needing license (in state government notified areas).
7. Power Trading is being recognised as an activity that can be taken up after authorisation of RCs. The RCs would issue licence and fix ceilings on trading margins. Distribution licensees and state governments do not require license to carry out trading.
8. After Open access is allowed, consumer can enter into direct commercial relationship with a generating company or Trader. In such a case, the price of power will not be regulated, but the transmission charges (called wheeling charges) and surcharge would be.
9. State governments can un-bundle SEBs and create companies. At the minimum the transmission activity needs to be separated from SEB. All states should have Regulatory Commissions.
10. An Appellate tribunal will be created at the Centre for disposal of appeals against decisions of CERC and SERCs.
11. Strict provisions to deal with power theft.
12. Tariff: Tariff would be along commercial principles to encourage competition and efficiency. Multi year tariff formulation is suggested with gradual elimination of subsidies. Metering to be 100% in a few years time. Time of the Day tariff to be introduced in a phased manner.
13. Central government would bring out National Electricity Policy, Tariff Policy, National policy on standalone systems for rural areas and a National policy on electrification & local distribution in rural areas. CEA shall prepare National Electricity Plan

Source: <http://www.prayas.pune.org/Eact/Index.htm> (accessed 08/31/2006)

Annex 2: Positions and Perceptions of Stakeholders on Electricity Supply to Agriculture

1 Agricultural Sector

1.1 Farmers Organizations

Interview Partners and Data Sources

Interviews were held with representatives of the following organizations: (1) Liberal Farmers Movement led by Mr. Sharad Joshi at the national level; (1) All India Kisan Sabha, the farmers' organization associated with the Communist Party of India (Marxist (CPI (M))) in both states and at the national level; (3) the Federation of Farmers' Associations in Andhra Pradesh (FFAAP); an umbrella organization of 750 farmers' groups;⁵⁷ (4) BKU (Ugraha), as an example of the BKU organizations in Punjab; and (5) farmer groups organized by the Kheti Virasat Mission in Punjab, a non-governmental organization that promotes environmentally sustainable farming. The choice of these organizations was guided to cover the political spectrum from pro-liberalization to anti-liberalization, or "left" to "right". In addition to the interviews, published statements and websites (if available) of these organizations were also reviewed.

Positions and Perceptions

Electricity subsidies, free electricity policy and metering

According to the interviews conducted with the farmers' organizations, no farmers' organizations had originally demanded free electricity. As the interview partners pointed out, the measure was introduced by political parties as a political strategy. As one group explained, "free" is a very catchy word from a political perspective. However, once electricity was made free, most farmers' organizations at the state level welcomed the measure, and started to fight for it. The farmers' organizations in Punjab organized protests, including the refusal to pay bills, when the Congress-led government did not keep its election promise of free electricity. The interviewed farmer groups organized by the Kheti Virasat Mission, took a different view on the issue. They expressed the opinion that electricity should be appropriately priced and metered, but quality and reliability should be improved.

⁵⁷ <http://www.indianfarmers.org/ffa/ffaabout.htm>

The two farmers' organizations interviewed in Andhra Pradesh both stressed that free electricity is important to improve the precarious income situation of the farmers. The Kisan Sabha representative stressed the relevance of this policy especially for the small farmers. Apart from protesting the tariff hikes in 2000, his organization protested against the introduction of metering. The representative of the Federation of Farmers Associations was member of a Task Force on Electricity appointed by the Andhra Pradesh Government. His organization conducted a survey and submitted a report to the concerned authorities. The organization proposed a targeted subsidy scheme, according to which farmers should receive a certain number of units free, and pay a tariff, differentiated by farm size, beyond for consumption beyond these units. The scheme requires metering, so the organization is not opposed to it, but requires better quality (see below). Among the other farmers' organizations, the Kisan Sabha representatives also expressed the opinion that electricity should not be free for the big "landlords." However, they did not seem to consider it strategically useful to focus on this targeting question in their practical actions.

At the national level, Mr. Sharad Joshi, the leader of the Liberal Farmers Movement pointed out that it is difficult for his organization to take a position against free electricity, even though, in principle, the organization is against subsidies. He emphasized that the overall protection rate of the Indian farmers is negative, pointing out that this fact is not disputed by leading agricultural economists, even though there is a debate as to the level of the negative protection rate. He also explained that the level of the electricity subsidy is overstated in the general debate, as the farmers' receive off-peak supply of very low quality (see below). The interviewed representative of the All India Kisan Sabha at the national level pointed out that electricity should be "affordable and reliable", but—unlike social services such as education—there would be no need for electricity to be free. He pointed out that in the states ruled by CPI (M), electricity was never free, and, according to him, it is more reliable there than in other states.

Quality of electricity supply

All interviewed representatives of the farmers' organizations rated the quality of the electricity supply to be very low. The major concern expressed in most interviews was the restricted availability: the hours of supply were considered to be too limited and too irregular. Other problems addressed in the interviews include the fact that electricity is mainly supplied during night time, and the fact that it often takes considerable time and efforts, including bribes, to get lines repaired. Mr. Sharad Joshi emphasized that fluctuation in voltage causes considerable damage to the pump sets, and that the irregularity of supply leads to crop losses as farmers cannot irrigate the

crops when needed. Linking these problems to the question of subsidies, he stated (Joshi, 2006, personal communication):

“If you take into account, the damage caused to crops, and the plant, the electricity supply board might come out owing money to the farmers, because the losses are several times the bills that they actually pay.”

In the interviews with the other farmers’ organizations, the issue of motor burnouts figured less prominently than one would expect, considering the cost implications identified in the World Bank study (World Bank, 2001b).

Most interviewed farmers’ organizations did not hold the view that the farmers would be in a better position to argue for improved quality, if they pay, or pay more, for electricity. It rather appeared that most farmers consider the prospects of improvements in quality rather limited whatever they demand, because—as some interview partners pointed out—they had not seen any improvements in quality for decades. However, some farmers’ organizations are rather pro-active in this regard. The Federation of Farmers Associations in Andhra Pradesh had compiled detailed data on the problems of electricity supply, due to the survey they conducted as members of the Task Force mentioned above. The Federation is now engaged in a pilot project of establishing a cooperative society, which will take over the technical and administrative management of an electricity substation. This project is expected to serve as a model for more efficient energy use.⁵⁸

Electricity-groundwater nexus

With the exception of the farmer groups organized by the Kheti Virasat Mission and the Liberal Farmers Movement, none of the interviewed farmers’ organizations shared the view that the flat rate or the free electricity policy would lead to an overuse of groundwater. The two major arguments put forward in support of this opinion were the following: (1) It is not rational for the farmers to use more water for irrigation than needed, as this will damage the crops. (2) Due to the time restrictions, the availability of electricity is not sufficient for the water requirements of the crops anyhow. Most farmers, especially in Punjab, use Diesel pumps in addition to electricity to be able to irrigate their crops adequately. All interviewed farmers’ organizations acknowledged that declining groundwater levels are a serious problem, but they attributed this problem to other reasons than the flat rate or free electricity. The following reasons were stated: (1) Failure of the government to provide adequate surface water

⁵⁸ See <http://www.indianfarmers.org/ffa/ffaabout.htm>.

irrigation; (2) failure of the government to provide appropriate information to the farmers on the groundwater situation; (3) lack of adequate marketing facilities and ensured remunerative prices for crops that consume less water; and (4) declining rainfall.

Power Sector Reforms

With the exception of Mr. Sharad Joshi, none of the interviewed representatives of the farmers' organizations was of the opinion that privatization would be a solution of the problems that the farmers experience regarding electricity supply. They rather expected that privatization would lead to higher prices, while the private sector would not be interested in providing high-quality electricity to the farmers. In Punjab, the interviewed farmers' organizations considered it to be a more appropriate strategy to reform the State Electricity Board by making the employees more accountable. The representative of the Federation of Farmers Associations in Andhra Pradesh expressed the opinion that the unbundling of the State Electricity Board only increased the number of personnel in well-paid high-level positions, but it has not led to any improvement in the quality of electricity supply to the farmers, as the survey carried out by the organization showed. By contrast, Mr. Sharad Joshi mentioned the example of liberalization and privatization in the telecommunications sector as evidence that this reform approach would be preferable.

1.2 Agricultural Laborers' Organization

Interview Partner

The agricultural laborers represent a considerable share of the rural population and, accordingly, of the rural voters. According to the 2001 Census, 34% of the rural population in Andhra Pradesh are, agricultural laborers, in Punjab, the figure is 16% (GoI, 2001). A major organization representing them is the All India Agricultural Workers Union. A representative in Andhra Pradesh and a representative at the national level were interviewed. In Andhra Pradesh, the Union represents approximately one million members.

Positions and Perceptions

The interviewed representatives expressed the opinion that the agricultural laborers benefit indirectly from the electricity subsidies to agriculture and the free power policy, even though it is, in principle, not a strategy they endorse. At the present situation, however, all policies that make agricultural production more profitable are, according to the interview partners, in the interest of the agricultural laborers, as this

creates employment opportunities. In this context, they pointed to the agricultural crisis and the decline in the average number of work days per year at which agricultural laborers find employment, both nation-wide and in Andhra Pradesh. After the 2004 elections in Andhra Pradesh, the Agricultural Workers' Union criticized that the agricultural laborers had to pay their household electricity bills in spite of their high poverty level, while even the rich farmers did not have to pay for electricity. To some extent, policy-makers subsequently addressed this concern.

In the overall strategy of the Agricultural Workers' Union, the electricity question does not play a major role. The major concerns are access to land, especially in Andhra Pradesh where land reform is an important issue on the political agenda, the implementation of minimum wages, and better access to health services and education.

1.3 Agricultural Administration

Interview Partners

In both Andhra Pradesh and Punjab, representatives of the Departments of Agriculture were interviewed. In both states, the interview partners explained that the policy of free electricity was a political decision, against the background of agrarian distress. They see a major role in the work of the Department of Agriculture to increase the productivity and sustainability of agricultural production, and pointed to the wide range of programs and activities, which are implemented in each of the two states.

Positions and Perceptions

In the case of Punjab, the interview partners expressed the opinion that the farmers are more concerned with the quality and reliability of the electricity supply than with the tariff. The interview partners expressed the opinion that free electricity or the flat rate tariff are not the reason for the high-levels of groundwater extraction in the state, since the time restrictions of the electricity supply would not allow farmers anyhow to meet their irrigation requirements, so the use Diesel pumps in addition. To address the groundwater problem, the Departments of Agriculture in both states promote crop diversification as well as techniques that allow farmers to grow paddy with less water. However, technical problems such as weed control have so far restricted the adoption of such water-saving techniques. Making other crops economically competitive was identified as the major challenge to crop diversification in both states. The interview partners from the Department of Agriculture in Punjab also pointed to the fact that the state supplies more than half of the food grains to the central pool. They explained that

this constitutes a challenge to crop diversification, because the option to import food is politically highly contested.

1.3 Commissions on Farmers

Interview Partners and Data Sources

In the Indian context, commissions play an important role in providing scientific advice to policy-makers. At the national level, the Secretary General of the National Commission on Farmers was interviewed. The chairpersons of the Punjab State Farmers' Commission and of the Andhra Pradesh Commission on Farmers' Welfare were also interviewed. The reports produced by these organizations were also taken reviewed.

Positions and Perceptions

The National Commission on Farmers has formulated the recommendation that the electricity supply to agriculture should not be free, electricity should be metered and priced appropriately so as to create incentives to save water. As an exception, the Commission considers it acceptable to provide free electricity in emergency situations that farmers' cannot cope with otherwise, but in such cases, electricity charges should be reintroduced once the crisis is over. The Commission emphasizes that the need to improve the reliability and quality of the electricity supply when asking the farmers to pay for it. Moreover, the Commission recommends a decentralization of electricity supply and the involvement of the institutions at the Panchayat level.

The Punjab State Farmers' Commission, which was set up in July 2005, identified a strong link between the free power policy and groundwater extraction on the one hand, and difficulties of the power utilities on the other hand. The Commission also addressed the unequal distributional consequences of the free power policy. The Commission recommended crop diversification, but emphasized that farmers' need an assured market. Raising the minimum support price for maize and using maize to produce bio-ethanol was one of the suggestions in this regard.

The Andhra Pradesh Commission on Farmers' Welfare developed a number of recommendations regarding groundwater, surface water and electricity. Among others, they include improvements in the quality of electricity supply and the hours of supply to farmers; reduction of transmission and distribution losses and inefficiency through better management practices in the power sector; conjunctive use of surface water and ground water; promotion of groundwater recharge; and allocation of funds to develop incentives for groundwater conservation (GoAP, 2004: 62-64). With regard to the free

electricity subsidy, the chairperson of the Commission reported that in several instances, public hearings held by the Commission almost turned into riots when the suggestion to re-introduce electricity pricing was made. For the medium term, the Commission (GoAP, 2004: 63) recommends that

“the state government should aim for the public takeover of groundwater resources. All the existing borewells would have to be taken over, after paying appropriate compensation to the current owners. All new borewells would be dug by and be owned by the state government. [...]. Thereafter, water would be provided from the borewells on payment of water cess on the basis of volumetric measurement through tamper-proof meters, at the same rates as those applicable for command area farmers. The local management of the water would have to be managed by an appropriate local agency. This would regulate the use of groundwater, provide more democratic access, and reduce the costs incurred by farmer for digging of borewells.”

2 Energy Sector

Interview partners and data sources

In Andhra Pradesh, interviews were conducted with representatives of the unbundled units of the former Andhra Pradesh State Electricity Board, including the Andhra Pradesh Power Generation Corporation (APGENCO), Power Transmission Corporation (APTRNASCO), and the distribution company in charge of the Central Region (APCPDCL). Representatives of the Andhra Pradesh Electricity Regulatory Commission (APEREC) were also interviewed. A member of the Engineers Association was interviewed in his function as member of the People’s Monitoring Group on Electricity Regulation (see below). In Punjab, interviews were held with representatives of the State Electricity Regulatory Commission (PSERC) and the Electrical Engineers Association and the Technical Services Union of the Punjab State Electricity Board (PSEB). An interview with the management of PSEB could not be realized, but it was possible to attend an open meeting organized by APEREC, in which a PSEB representative commented on a range of issues that are relevant for this study. At the national level, an interview was conducted with the Secretary of the Ministry of Power.

2.1 Energy Sector Management and Employees

Positions and Perceptions

Andhra Pradesh

The interviewed representatives of APGENCO, APTRANSCO and APCPDLC explained that unbundling played an important role for improving the performance of the sector. According to their experience, unbundling led had advantages due to increased specialization and improved accountability. Prior to unbundling, most efforts were concentrated on power generation, while transmission and distribution received less attention, which led to serious problems and underinvestment in these areas. A tri-partite agreement between the government, the former State Electricity Board and the unions representing the employees was, according to the interview partners, an essential pre-condition of the reform. In this agreement, the employees received a guarantee that no employee would lose his or her job (while voluntary agreements, e.g., for early retirement were possible), and that no employee would experience a reduction in payment or other benefits.

None of the interviewed utility representatives considered the free electricity policy to be an obstacle to the reform process of the power sector, because the state government does compensate the utilities for the revenue losses. Moreover, as one of the interview partners pointed out, the free power policy was implemented in close consultation with the management of the electricity sector entities to assure that they were well prepared. The interviews also indicated that the management of the utilities consults closely with the government regarding priorities in case of power shortages. In critical phases of the crop production cycle, agriculture receives priority, and station managers have discretion in adjusting the hours of power supply to specific needs of the cultivators.

The representatives of the power distribution company (APCDPLC) explained that considerable investments have been made to improve the quality of power supply, including in rural areas. An international system of performance indicators is used to measure the quality of supply, but regionally disaggregated performance data for rural areas were not yet available. The company is in charge of ensuring that all services are metered until 2008/09. From a purely technical perspective, the representatives explained, establishing and reading meters for agricultural pump-set connections does not incur major transaction costs. The company has outsourced and modernized meter reading and bill collection, which led to considerable reductions in transaction costs. The company estimates that the costs of reading meters for agricultural connections would not be higher than Rs. 5-6 per meter reading and billing. Moreover, readings could be limited to two times per year. However, the company has, so far, faced difficulties when trying to install meters for agricultural supply, which implies that the

transaction costs of implementing metering without prior consensus would be high due to enforcement problems.

The interviewed member of the Electrical Engineers' Association took a more critical view of the reform process. He pointed to considerable financial problems involved in some of the Power Purchase Agreements. He also criticized that the reform process has mainly been managed by a small group of foreign consultants, while the expertise of top-level domestic staff has not been used.

Punjab

As indicated above, the current government has formulated a far-reaching reform strategy with the aim of privatization. The government also signed a Memorandum of Understanding with the central government, which includes financial support for the reform program. The PSEB Electrical Engineers Association is opposed to the plans of unbundling and privatization. The association, which has produced a number of documents on the issue for communication with policy-makers, points out that the financial difficulties of PSEB are mainly due to the fact that the previous government did not compensate the Board for the losses incurred by providing free electricity to farmers and other groups of consumers. Referring to the experience with the Orissa model, the Association rejects privatization and points to vested interests that promote this measure. The Association recommends a public sector reform model, which includes functional unbundling instead of structural unbundling, more independence from political decision-making, and more investment in human resources development. Referring to the power supply to agriculture the Association (Bedi, 2003: 3) had pointed out:

“During the severe drought of the year 2002 caused by partial failure of monsoon, PSEB diverted over 900 Million Units to tubewells to save the paddy crop by restricting power supply to industry, including the highest paying steel furnaces. In a market-operated power industry [...], this would not have been possible and paddy crop of Punjab would have been destroyed.”

The interviewed representatives of the PSEB Technical Services Union stated that their organization is not against the free power policy as long as the utilities are compensated by the government. However, metering should be introduced as it improves accountability. As the interview partners pointed out, the cost of metering is not excessively high. The Union expressed the view that the industrial sector should receive priority, especially in industries that depend on continuous supply. Agricultural users should be provided with more than eight hours of supply, if they are willing to pay for such extended service. The interview partners acknowledged that,

due to low investment, the service quality has deteriorated, especially in rural areas. The Union is against unbundling and argues that the system would produce better results if generation, transmission and distribution are governed by one utility. Moreover, they expect that privatization would reduce employment opportunities.

Speaking at an Advisory Committee Meeting of PSERC, the representative of the PSEB emphasized the strategy of the Board to improve electricity supply by investing more in human resources development and training. While, according to him, such measures have already been successfully implemented at the management level, PSEB plans to invest more in training and awareness creation of the field officers.

2.2 State Regulatory Commissions

The interviewed representatives of the State Regulatory Commissions in Andhra Pradesh (APERC) and Punjab (PSERC) pointed out that the free power policy is, in principle, not an obstacle to the reform process, as long as the government compensates the utilities for the revenue losses. This has been largely achieved in both states. With regard to the quality of electricity supply to agriculture, the representatives of both Commissions pointed to their role in defining standards of performances, establishing procedures for handling complaints, and creating the institution of the ombudsman. The representatives from both commissions pointed out that the hearings and other events they organize have in fact established a forum where energy suppliers and different groups of energy consumers can meet and participate in the regulatory process. According to the interview partners, farmers' organizations actively participate in those meetings in both states. The role of the People's Monitoring Group on Electricity Regulation in Andhra Pradesh is described below.

2.3 Energy Sector Administration

The Secretary of the Ministry of Power at the central pointed to role of his Ministry in providing incentives for power sector reforms at the state level. The Accelerated Power Reform and Development Programme (APRDP) is one example. He expressed the opinion that farmers are interested in the reliability and quality of electricity supply, rather than in free electricity. In this context, he pointed to the fact that farmers have to use Diesel pumps at a much higher cost, if electricity supply is unreliable. The Secretary emphasized the need for metering, drawing a parallel to the Public Distribution System—the amount of food distributed in fair price shops is also measured. He stressed that free electricity leads to an overuse of groundwater

resources. In this context, he also mentioned the need for a Water Act. Regarding the quality of power supply in rural areas, the Secretary drew attention to the fact that the Electricity Act of 2003 makes special provisions for rural areas by delicensing local power generation and distribution. These provisions were made to with a view to meeting the demand of agricultural producers, acknowledging that local generation can perhaps provide better quality and reliability of power supply.

2.4 Industry

The role of the farmers as energy consumers has already been discussed above. To understand the position of the industry as an energy consumer, representatives of the Federation of Indian Chambers of Commerce and Industry (FICCI) were interviewed. As the interview partners explained, FICCI does not take a position against subsidies or free power to the agricultural sector, but the Federation demands that the government compensates the power utilities so that cross-subsidies and a financial burden for the utilities can be avoided. The interview partners acknowledged that the quality of the energy supply to agriculture definitely needs to be improved, but mentioned the “chicken and egg” problem regarding quality improvements and higher payments. On the issue of power theft, FICCI recommends better law enforcement. Regarding power sector reforms, the interview partners emphasized that “one-size-fits-all” models will not work. FICCI does not consider privatization as a universal solution, reform options should be adjusted to the local conditions.

3 Non-Governmental Organizations (NGOs)

Interview partners and data sources

Non-governmental or civil society organizations (NGOs) can play an important role in the reform of the electricity supply to agriculture. Two NGOs were interviewed for the study: The Kheti Virasat Mission in Punjab, and the People’s Monitoring Group on Electricity Regulation (PMGER) in Andhra Pradesh. The website of PMGER was also consulted.

3.1 People's Monitoring Group on Electricity Regulation (PMGER)

PMGER⁵⁹ was formed in 1999 by a group of individuals and organizations that concerned with the power sector reforms, which were gaining momentum at that time and focused on privatization. The group is led by Mr. Thimma Reddy from the Center for Environmental Concerns in Hyderabad, and brings together organizations representing electricity engineers and employees, farmers and agricultural laborers as well as environment and development NGOs.⁶⁰ PMGER aims to be an interface between the Andhra Pradesh Electricity Regulatory Commission (APERC) and different groups of society, including disadvantaged groups, to defend common people's interests in the reform process.⁶¹

Prior to the 2004 elections, PMGER has developed the position that electricity supply to the farmers should be made free, but this policy should be accompanied by several measures to save electricity and control groundwater extraction, such as installation of capacitors, and restrictions on new bore wells. The group estimates that combining capacitors, frictionless foot valves and ICI motors, energy consumption by agriculture can be reduced by 30-40 percent. The group actively promoted this position of free electricity associated with energy and water saving measures prior to the elections, for example, by issuing press statements and organizing meetings with members of the State Legislative Assembly. The group also works with farmers to educate them about the possibilities to save energy. The interview partner representing Prayas, a Pune-based NGO engaged in energy sector reforms, explained that free electricity is not considered to be an appropriate policy in the long run, but is regarded as necessary in the present situation in order to address the crisis in the farm sector. PMGER also conducted a critical analysis of several Power Purchasing Agreements (PPAs) and issued statements addressing concerns regarding their financial implications. The group sees ample scope to improve the quality of power supply through improved maintenance of existing infrastructure, and recommends studying the efficiency of High Voltage Distribution System (HDVS) before adopting this rather expensive strategy on a large scale. PMGER does not consider privatization as an appropriate

⁵⁹ See <http://www.pmger.org>.

⁶⁰ Apart from the Centre for Environment Concerns, an NGO working on development issues, the following organizations are also represented in PMGER: Andhra Pradesh State Electricity Board Engineer's Association, United Electricity Employees Union (estimated 8,000 membership), Prayas Energy Group, Pune, Banjara Development Society, Hyderabad, two farmers' organizations (representing more than 200,000 members), and an organization of farm labourers (with approximately 500,000 members) (see <http://www.pmger.org/members.asp>).

⁶¹ See mission statement and objectives of PMGER at <http://www.pmger.org>

reform strategy. Among all interviewed organizations in Andhra Pradesh, this group was the only one that mentioned that there are already several electricity cooperatives in the state that manage electricity distribution in a decentralized way. According to the interview partners, some of them are apparently working very well.

3.2 Kheti Virasat Mission

The Kheti Virasat Mission has the objective to promote environmentally sustainable agricultural production in Punjab. The organization focuses on organic farming and the sustainable use of soil and water resources. High levels of pesticide use in Punjab and their negative implications for human health and the environment are a major concern of the Mission. The organization is located in a rural area and works directly with farmers groups to address pressing agri-environmental issues.⁶² The views of the interviewed farmers' groups organized by Kheti Virasat Mission have been reported above. For the NGO itself, its founder Mr. Umendra Dutt explained that electricity should not be made free as it contributes to the overexploitation of groundwater, which is a serious problem in the state. In general, however, the NGO considers subsidies to be necessary as the farmers in Punjab have to compete internationally with farmers, e.g., in Europe, who are heavily subsidized. The NGO is one of the relatively few organizations interviewed for the study that expressed explicit concerns about the distributional implications of the free power policy, pointing to the fact that the large farmers benefit most. Moreover, it is one of the few organizations that stressed a need to invest in renewable energy sources, such as micro-hydel plants, bio-energy and solar energy. With regard to power sector reforms, the NGO does not believe that privatization is a solution as it may hamper the interests of farmers. The NGO recommends stricter control of electricity theft, and increasing the accountability of the electricity sector employees, especially in responding to complaints. With regard to groundwater conservation, Kheti Virasat Mission received funding to organize a policy dialogue on water policy, which corresponds to the NGOs position that policy processes should become more participatory. The NGO argues for the development of a water policy that is in line with Punjab's cultural traditions, in which sharing of water resources and avoiding exclusion plays an important role.

4 Political Party Representatives

⁶² Kheti Virasat Mission is located in Faridkot. This region was chosen because it has the highest levels of pesticides in Punjab.

Interview partners and data sources

As representatives of the political parties, Party Secretaries at the state level and/or Members of the Legislative Assemblies (MLAs) were interviewed.⁶³ In addition, websites and media reports on the role of the different parties were reviewed.

4.1 Congress Party

Andhra Pradesh

The General Secretary of the Congress Party in Andhra Pradesh stressed the importance of free power to agriculture as a major initiative of the Congress government. He also emphasized the Party's focus on the reliability of power supply. Likewise, the section on "achievements" of the website of the Andhra Pradesh Government lists (1) waiving the arrears of power bills related to agricultural consumption and (2) the supply of free electricity to farmers as the first two major achievements, before any other item.⁶⁴ The personal website of the Congress Chief Minister Y.S Rajasekhara Reddy states: "Another feather on Dr. YSR's cap is winning the hearts of the hardcore advocates against the Free Power Supply to the favour of farmers of our State ...". As indicated in Chapter 11, the Congress Party in Andhra Pradesh does pursue this policy in combination with energy-saving measures, such as the installation of capacitors, even though the opposition tried to mobilize farmers against this issue (The Hindu, 05/11/2005). Moreover, major emphasis is placed on expanding groundwater irrigation (see Chapter 9.1.3).

The Congress Party at the central level, when emphasizing its commitment to economic reforms after the 2004 elections, portrayed the free electricity policy in Andhra Pradesh as an "emergency response" to an "emergency crisis," pointing to the fact that 3,000 farmers had committed suicide (The Hindu Business Line, 14/05/2004).

Punjab

Even though the Congress Party in Punjab also pursues a free power policy (see Chapter 9.2.4), the Party leaders there seem to have a completely different take on the matter than the Congress Party leaders in Andhra Pradesh. The interviewed party

⁶³ The plan was to select MLAs with an agricultural background, and to include women and representatives of Scheduled Castes and Scheduled Tribes (SC/ST). However, it proved to be challenging to establish contacts and arrange meetings with MLAs within the time scope of the project. Hence, availability turned out to be the main criterion to select interview partners.

⁶⁴ See <http://www.aponline.gov.in/apportal/HomePageLinks/schemes.htm>

representatives in Punjab stressed they had to adopt the free power policy only for strategic electoral reasons, considering the fact that the Akali Dal pursued this policy. The interview partners stated, however, that the demand for this policy originally came from the farmers. Still, they expressed the opinion that the farmers would value 24 hours regular supply more than free power. The party does not consider free power to be a sustainable policy that is feasible in the long run. The party representatives stressed that the Government compensates the PSEB in order to avoid negative implications for the power sector. The party is committed to the privatization of PSEB, as the party considers this to be the only feasible strategy to improve the efficiency of the system. Moreover, nuclear power is seen as the most suitable approach to resolve the shortage of electricity supply in the state, considering the rapidly raising demand in the domestic sector (especially for uses such as air conditioning). The party representatives stressed that, in their view, free or subsidized electricity is not the reason for the over-extraction of groundwater, as the hours of supply are restricted. The party strongly promotes crop diversification as a solution to the problem of overuse of groundwater.

4.2 Communist Party of India (Marxist) CPI (M)

The interviewed CPI (M) representatives in both Andhra Pradesh and Punjab emphasized that, in their view, free electricity was introduced as an electoral strategy to win the farmers' votes. In both states, the party is of the opinion that the large land owners should pay for electricity, and that targeting would be feasible. Regarding the power sector reforms, the representatives of both states expressed the view that unbundling is not a useful reform measure. CPI (M) strongly opposes privatization, considering it a "recipe for disaster" (Jagga, 2001).

The CPI (M) representative from Andhra Pradesh expressed the view that the quality and reliability of power supply to rural areas in the state has increased. Earlier, his party was involved in agitations against low quality supply in some districts. Regarding the link between electricity supply and groundwater use, the interview partner expressed the view that the farmers would be in a better position to optimize water use, if they had more and better access to electricity. He also indicated that the AP WALT Act has been effective in halving the number of new bore wells.

The CPI (M) representative from Punjab indicated that the farmers would be more interested in 24 hours regular supply than in free electricity, even though the farmers' organizations demand free electricity for all kinds of farmers. His party suggests that only up to 300 units should be free. Moreover, power theft as well as technical and

distribution losses should be reduced. The party considers crop diversification as a suitable strategy to deal with the problem of over-extraction of groundwater.

4.3 Regional Parties

Telugu Desam Party (TDP) in Andhra Pradesh

The interviewed secretary of TDP stressed the success of the power sector reforms as an achievement of the TDP-led government. His party does not consider the free power policy as a useful strategy, it has not been a demand from the public, and will have to be phased out gradually. According to him, the T&D losses were, which were brought down from 30-32% to 18% under the rule of his party, have now gone up to 23 % due to the free power policy. TDP observes that the quality of electricity supply has deteriorated with the free power policy, as it has led to the growth of the illegal connections and the burning of the motors and transformers. The party disagrees with the HVDS system due to its high costs and favors good quality capacitors instead. In principle, the party supports surface irrigation projects exploiting river water, but they should be affordable and technically feasible. Water-tribunals need to be constituted for sharing of the river water.

Telangana Rashtra Samithi (TRS) in Andhra Pradesh

TRS is a regional party currently represented in the State Legislative Assembly of Andhra Pradesh. Its main agenda is the creation of a separate state of Telangana. The interviewed Member of the Legislative Assembly expressed the position that electricity should be free only for small and marginal farmers. Farmers with holding above 5 acres should pay for it. He also expressed the concern that scheduled casts and tribes do not benefit from the policy as they do not have access to land. The policy is responsible for the increase in illegal connections. The party advocates metering as essential to improve the efficiency of the system. The quality of power supply has, according to the interview partner, deteriorated under the free power policy. He does not see any connection between the electricity pricing and the problem of groundwater over-extraction. Instead, he considers inadequate rainfall, paddy cultivation, and the unequal distribution of surface water as the major causes of groundwater depletion. Most of the surface water, he said, is distributed to Coastal Andhra Pradesh, while dry areas like the Telangana are disadvantaged. He does not consider the Electricity Regulatory Commission as a transparent body, but rather as an institution that is affiliated with the government.

Shiromani Akali Dal (SAD) in Punjab

The interviewed representatives of SAD stressed that their party had always given priority to the electricity supply to agriculture, and that they were the first to announce the free power policy in the state. They consider the quality of electricity supply to agriculture to be poor and believe in technical solutions. In view of the shortage of electricity in Punjab, SAD argues that emphasis should be placed on increasing the power generation capacity. SAD considers the statement that farmers use more electricity when it is free as a “false propaganda.” They consider groundwater overexploitation as the consequence of extensive paddy cultivation.

5 International Financial Institutions and Donor Organizations

Interview partners and data sources

Since the World Bank is the major international institution financing power sector reforms, several World Bank staff members were interviewed: (a) in the New Delhi Office: a power sector expert, an agricultural expert and a communications expert; (b) in the Washington Office: three experts working on Andhra Pradesh, Punjab, and the agricultural sector in general, respectively. As major donor agency supporting the power sector reforms in Andhra Pradesh, two members of DFID (the UK Government’s Department for International Development), New Delhi Office, were interviewed. Two members of the consultancy KPMG based in Hyderabad, who supports the power sector reforms in the scope of the DFID project, were interviewed, as well. Information on other donor organizations involved in energy and water resources management was collected from websites. In addition, published information, such as reports, were also reviewed.

5.1 World Bank

As mentioned above, the World Bank conducted a major study on the power supply to agriculture in Andhra Pradesh and Haryana in 2000 (World Bank, 2001b). The study describes the power supply to agriculture as a “vicious cycle,” in which poor quality of power supply leads to over-extraction of water and low incomes, which creates incentives to lobby for electricity subsidies. The subsidies, in turn, make it difficult to improve the quality of supply. While acknowledging the political challenges of increasing tariffs, the study recommended improving the power supply through reforms that are partially based on higher tariffs. Based on model simulations, the authors state that the income of farmers would increase in the medium term in spite of

higher tariffs, due to improved quality of supply. The recommendation to increase tariffs and to pursue power sector reforms is in line with the World Bank's energy sector policy, which envisages private sector involvement and increased cost recovery (World Bank, 2001a). Hence, reforms that aim at privatization, and tariffs that lead—at least partly—to improved cost recovery have been conditionalities for World Bank lending in the energy sector. However, this policy conditionality was relaxed when it became apparent that the electricity pricing for agriculture did not prevent continuation of the power sector reforms. Moreover, while the World Bank does not approve the free power policy, the interview partners acknowledged that the policy was a political response to the political pressures created by the increasing income disparity between the agricultural and the non-agricultural sector, and additional challenges such as the drought in Andhra Pradesh. The interviewed energy expert pointed out that the energy group is not principally against subsidies to the agricultural sector, but insists that the subsidies should be applied in such a way that they do not have negative implications for the power sector. The interviewed agricultural experts emphasized the need to place the electricity subsidies to agriculture in the wider context of agricultural policy in India. In order to limit the overall fiscal deficit, there are discussions on options such as placing a restriction on the overall level of agricultural subsidies rather than dealing with restrictions on each specific subsidy.

The interviews also indicate that the World Bank does not insist any longer on privatization of the power sector as a conditionality for lending either, considering that progress has been made with public sector reforms and considering that privatization turned to be out politically difficult. As the interviewed energy expert explained, a challenge of a public sector model, however, is to make the utilities sufficiently independent from political influence.

5.2 DFID

DFID has been providing technical assistance to the power sector reform in Andhra Pradesh. The objective of DFID's "Andhra Pradesh Power Sector Reform Technical Assistance" project is to support the state government's power sector reform program "that seeks to provide high quality power services and to reduce the subsidy from the government budget, freeing-up resources for poverty reduction spending."⁶⁵ The interview partners from DFID expressed their discontent with the free power policy that the Congress government adopted, which they consider as an impediment to the

⁶⁵ See project website at http://www.dfidindia.org/proj/proj_det.asp?dfid0010.

reform process. They see a major problem with this policy in the loss of revenues that would be required to invest in the improvement of the distribution system and explained that major investments over several years would be necessary, before the quality of the electricity supply to agriculture could be improved substantially. The interview partners acknowledged that the Congress government has introduced some targeting of the free electricity policy, but criticized that only 5 % of the farmers are now excluded.

5.3 USAID

USAID has a project that focuses specifically on the electricity supply to agriculture called WENEXA (Water and Energy Nexus).⁶⁶ The project aims at promoting the co-management of the energy and the water sector through policy dialogue at all levels and through the development of technical and institutional solutions for managing water and electricity jointly in a more efficient way. After a pilot phase in one watershed in Andhra Pradesh, the project is now implemented on a wider scale in Andhra Pradesh, Maharashtra, Karnataka and Delhi. At the field level, the project activities include, among others, the (a) the overlay of power distribution districts with watersheds or micro-watershed to demonstrate a holistic approach to energy and water management; (b) support to power utilities in the establishment of Village Utility Representatives and/or local power distribution or generation organizations (LPDGO's); (c) the creation of linkages with LPDGO's to form water-energy user associations; and (d) improved on-farm management of power and water resources through training and field demonstrations. The project experienced that collaboration with civil society organizations is a useful approach to promote the co-management of water and energy resources. IMWI is a partner in the WENEXA project.

5.4 Other donor agencies

Other donor agencies are also providing technical and financial assistance to the power sector and to groundwater resources management. The German Development Cooperation (GTZ) has an energy program that focuses on increased energy efficiency and renewable energy sources. The Food and Agriculture Organization of the United Nations (FAO) operates the “Andhra Pradesh Farmer Managed Groundwater System

⁶⁶ See <http://www.waterenergynexus.com/wenexa2/>

Project.”⁶⁷ This project aims at extending the concept of participatory and community-based irrigation management to groundwater resources. The project facilitates the formation of Groundwater Management Committees (GMC) made up of well owners with the aim to monitor groundwater levels, rainfall and discharge. The project also promotes Crop Water Budgeting as a tool to help farmers deciding upon appropriate crop systems matching the available groundwater resources. The project uses the Farmers’ Field School approach of agricultural extension to promote eco-friendly farming systems.

6 Academia and Think Tanks

Interview partners and data sources

Considering that academic institutions and think tanks are important providers of knowledge and analysis for policy issues related to the electricity supply to agriculture, researchers from the following institutions were interviewed: (a) in Andhra Pradesh: Center for Economic and Social Studies; and Osmania University (Dept. of Political Science); (b) in Punjab: Punjab University (Dept. of Political Science); Punjab Agricultural University, Ludhiana; Punjabi University, Patiala; and Institute for Development and Communication; (c) at the national level: TERI (Energy and Resources Institute); Jawaharlal Nehru University (Dept. of Sociology); National Institute for Public Finance and Policy (NIPFP); and International Water Management Institute (IMWI). An energy expert from Maharishi Dayananda University in Haryana was also interviewed. The interview partners were selected with regard to their expertise regarding the sectors (energy policy; agricultural policy; environmental policy) and/or the states (Andhra Pradesh, Punjab) that are relevant for this study.

Positions and perceptions

Instead of providing summaries of the individual interviews, this section provides a summary of the different positions that the researchers expressed with regard to the topics related to electricity supply to agriculture. The positions and views of the interviewed researchers cover the entire spectrum of opinions that is evident in the interviews with the different stakeholders presented above. Importantly, like other stakeholders, the researchers differ considerably in their views about facts, causal mechanisms and policy implications related to the electricity supply to agriculture. The positions can be summarized as follows:

⁶⁷ See <http://www.apfamgs.org/>

1) The most far-reaching consensus among the interviewed researchers could be observed in their *assessment that the agricultural sector is in a situation of distress or crisis* (the latter term is more frequently used by researchers working within the Marxist framework). The most important evidence quoted for this assessment quoted by researchers include the suicides of the farmers, the level of indebtedness of farm households, the relatively low growth rate of the agricultural sector (which accounts not only for low incomes in the sector, but also for a growing income disparity between the agricultural and the non-agricultural sector), statistics documenting declining profitability of major crops such as paddy since the second half of 1990s, and a higher volatility of yields and prices.

2) While there is a consensus about the problematic situation of the agricultural sector, there are large differences in the *assessment of the reasons* that have led to this situation. The debate on the topic very well reflects the general debate on the economic reforms quoted in Chapter 2. Researchers on the one end of the spectrum attribute the problems of the agricultural sector to the economic liberalization reforms that started in 1991, which led, for example, to reduced access to institutional credit. Researchers on the other end of the spectrum attribute to problems to the fact that the reforms have not gone far enough, so that considerable inefficiencies in the sector remain. Some researchers take environmental factors into account in explaining the current situation, such as the droughts in Andhra Pradesh, or the declining availability of water resources.

3) Related to the previous point, there is a considerable disagreement on the *role of subsidies* as a policy instrument to deal with the distress situation in the agricultural sector. On the one end of the spectrum, subsidies—including the free electricity policy—are seen as a legitimate instrument of welfare policy. On the other end of the spectrum, subsidies are seen as distortions of the market mechanisms, leading to inefficiency and crowding out investments that would be necessary to increase productivity. A middle ground in this debate is the position that targeted subsidies are acceptable, but opinions differ regarding the level of such targeted subsidies, the groups to be targeted, and the mechanisms by which subsidies can be targeted effectively without involving major transaction costs.

5) While the actual *amount of subsidies for electricity supply* to agriculture is now shown in the government budgets, there is still disagreement on the calculation of this amount. Even though metering has been introduced on a sample basis in both Punjab and Andhra Pradesh, there is a debate on the accuracy of the estimations based on this sample. Moreover, researchers hold different views on how important the magnitude of the electricity subsidies is in a wider context. Researchers that consider these

subsidies a legitimate instrument compare them with the amounts lost due to tax evasion, while researchers criticizing the subsidies compare them with investments in the health sector or with the total fiscal deficit.

6) Regarding the *distribution of the subsidies*, it is generally acknowledged that the larger farmers benefit more from the subsidies, if one takes only the direct effects into account. However, there is disagreement regarding the overall distributional effects of the subsidies, if indirect effects are taken into account, such as the implications for farmers who buy water from pump owners, the implications for agricultural laborers, and the effect of the subsidies on food prices and, consequently on the income of food purchasing households.

7) There is a rather far-reaching consensus that the *quality of electricity supply* to agriculture is very low. However, there is disagreement regarding the necessary steps to address the problems. Researchers disagree both on the technical aspects, for example, whether the High Voltage Distribution System (HDVS) is an appropriate measure, and on institutional aspects, which relate to the broader question of power sector reform (see below). However, there seems to be some agreement that decentralization and the involvement of user groups, such as electricity cooperatives, are strategies that are at least worth trying in order to improve the quality of power supply.

8) While there is consensus that the groundwater resources are overexploited in both Andhra Pradesh and Punjab, there is no consensus on the role that electricity pricing plays in this regard (*electricity-groundwater nexus*). Researchers on the one hand of this spectrum consider it as self-evident—without any need for further proof—that a flat-rate tariff, and more so, free electricity, will lead for an overuse of water resources as there is not incentive to save water. On the other end of the spectrum, researchers argue that it is irrational for farmers to use more water than is required for their crops, as overuse of water will cause crop damage. They also point to the fact that electricity supply is time-restricted. The group of researchers who do not believe that the nexus between groundwater use and electricity price is very strong includes agronomists as well as environmental experts, such as members of the Indian Ecological Society. Even among the researchers who agree that the flat-rate tariff contributes to overuse of water, there is disagreement on whether introducing volumetric pricing and charging higher tariffs is an appropriate or sufficient policy response (see next point).

9) Most researchers agree that *metering* would be useful in principle. Even those who do not see a strong link between flat rate tariffs or free electricity and water consumption consider metering useful to better monitor agricultural consumption.

However, there is disagreement on whether the introduction of metering is actually cost-effective and politically feasible. The argument of high transaction costs put forward by Shah et al. (2003) figures prominently in this debate.

10) Considerable disagreement exists regarding the appropriate approach to *reforming the power sector*. Researchers on the one end of this spectrum consider privatization the only feasible solution, whereas researchers on the other end of the spectrum hold the position that even unbundling the State Electricity Boards is not an appropriate strategy as it leads to increased coordination costs. Most researchers agree, however, that the Electricity Regulatory Commissions are, in principle, a useful institution. However, there is disagreement as to whether the Commissions are in fact independent and whether they make enough efforts to ensure adequate public participation in the regulatory process.