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INSTITUTIONAL PRACTICES AND THE NEPALESE POOR

Ganesh Adhikary

HMG-USAID-GTZ-IDRC-FORD-WINROCK PROJECT

STRENGTHENING INSTITUTIONAL CAPACITY IN THE

FOOD AND AGRICULTURAL SECTOR IN NEPAL

FOREWORD

This Rural Poverty Research Paper Series is funded through the project, "Strengthening Institutional Capacity in the Food and Agricultural Sector in Nepal," a cooperative effort by the Ministry of Agriculture (MOA) of His Majesty's Government of Nepal and the Winrock International Institute for Agricultural Development. This project has been made possible by substantial financial support from the U.S. Agency for International Development (USAID), the German Agency for Technical Cooperation (GTZ), the Canadian International Development Research Centre (IDRC), and the Ford Foundation.

One of the most important activities of this project is funding for problem-oriented research by young professional staff of agricultural agencies of the MOA and related institutions, as well as for concerned individuals in the private sector. This research is carried out with the active professional assistance of the Winrock staff.

The purpose of this Rural Poverty Research Paper Series is to make the results of the research activities related to rural poverty available to a larger audience, and to acquaint younger staff and students with advanced methods of research and statistical analysis. It is also hoped that publication of the Series will stimulate discussion among policymakers and thereby assist in the formulation of policies which are suitable to the development of Nepal's agriculture.

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INSTITUTIONAL PRACTICES AND THE NEPALESE POOR

Ganesh Adhikary*

INTRODUCTION

Nepal is one of the poorest countries in the world. The average Nepali had an annual income equivilent to $US170 in 1983 (World Bank, 1984). In an absolute sense, defined by the caloric gap between subsistence needs and food availability, 4.5 million or 36.2 percent of the population was estimated to be poor. They shared only 13.2 percent of the aggregate income in 1977 (Jain, 1981). The fact that 21 percent of the cultivable land is owned by 53 percent of the households, while 1.2 percent of the households own 13.5 percent of the cultivable land testifies to the prevalence of widespread poverty. Blaikie et al., (1982) states that "The symptoms of malaise in Nepal as a whole appear visibly in the form of erosion, landslips, and widespread deficiencies in diet, shelter, and clothing..."

In 1977, 78.7 percent of people living in the mountain region were absolutely poor. The hills and the Tarai respectively had 38.4 and 34.8 percent absolutely poor people. Absolute poverty was more pronounced in rural areas than in urban centers. The Far-Western region (including the present Mid-Western region) had the highest caloric gap followed by the Western, Eastern, and Central regions. In the Far-Western region the absolutely poor people were able to meet just about 50 percent of their caloric needs for subsistence (Jain, 1981). In 1981, it was anticipated that the absolutely poor people in 1985 comprised 45.2 percent of the expected population of 14.87 million (Jain, 1981). These projections are based on the assumptions that population, real GDP, and inflation grow at 2.3 percent, 2.3 percent, and seven percent per year. The realized annual rates of growth of these vital variables were 2.7 percent, 2.7 percent, and 20 percent between 1981 and 1985 (World Bank, 1983, 1984; Ministry of Finance, 1984). Thus, the incidence of absolute poverty is now much higher than Jain anticipated.

Similar assessments for other developing countries (India, Pakistan, and Bangladesh) also support the idea that absolute poverty has increased in Nepal over time, as agricultural productivity in these countries has been stagnant or declining over the past several years (World Bank, 1979). Nepal does not have any special advantage toward reversing this trend in the long run.

The Problem of Poverty

The basic reason for addressing the problem of poverty as part of Nepal's development efforts is to move toward a more healthy society. Since more than 45 percent of the people are estimated as absolutely

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poor, overlooking this problem leaves out a significant number of people untouched by Nepal's development efforts. Ignored, this group comprises a powerful force for social disturbance in future.

If the absolutely poor are ignored by development programs, the structure of the economy that evolves from development projects becomes lopsided. Industries in the private sector become oriented towards the goods and services demanded by the richer people. If the size economies in private industries are significant they need to take recourse to external markets because the poor do not exert an effective demand. Such lopsided industrial development limits broad-based industrial growth.

Because of its geography, export led growth for Nepal has limited scope (except for high value low bulk goods if produced on substantial cost advantages). Nepal's goods are generally unable to compete in the international markets on a sustained basis without subsidies because of its landlocked position. The state and domestic consumers (through cross-subsidies) cannot continuously subsidize exports as an ever growing amount of support is needed. This condition imposes severe limitations on export industries even if they are able to initially grow well. Thus, an export led industrial structure is trapped between competitive world market and a stagnant internal economy. However, if the internally consumed commodities are produced, Nepal is able to compete better with substitute imports simply through savings in distribution costs. The ability of such industries to sustain growth also depends on the incomes received by the absolutely poor domestic consumers.

Another important reason for analyzing the poor is related to research on economic dependency. If industrial growth is mainly export oriented, economic conditions within the world market dictate the economic conditions at home. Whenever the policies of Nepal's trade partners become restrictive, export earnings fall. In Nepal's case the economic dependence becomes very acute if "Foreign aid is development and development is to a large extent foreign aid" (Pradhan and Shrestha, 1983).

Still another important reason for addressing the problem of the poor is natural resource conservation. Population growth and lack of alternate ways of making a living for the poor forces them to cultivate steep land. Individual families destroy the natural vegetation of the submarginal land in the steep hills to grow extra food but the cummulative effect of this is reduced productivity. Owing to flooding in the Tarai flatland and landslides in the hills, the national level of production also will decline in a few years. An obvious "social trap" where individual gains do not add up to "social gains" is created. It has also become a matter of international concern because of the externality of flooding in India and Bangladesh. By addressing the poverty problem, Nepal helps protect its own economic base and also help conserve resources internationally.

Objectives

This paper qualitatively assesses the impact of agricultural development activities on the poor, including small and marginal farmers as well as landless rural people. The current institutional setting faced by the poor and the likely impact of major agricultural related

strategic public and private institutions on poor agriculturalists is discussed. Hopefully, the paper contributes to a better understanding of the problem of poverty in Nepal.

Land rights and incentives, price policies, interest rate structure, exchange rates, and subsidies are analyzed in terms of institutional setting. (Macroeconomic factors are included in the institutional setting as most of them are not altered in the short run and serve as givens for the poor). Strategic institutions such as agricultural research, extension, credit, irrigation, and the Small Farmers' Development Program are analyzed as to their effect on the poor. The distribution of institutional credit is also presented.

INSTITUTIONAL SETTING

Land Rights and Incentives

Christodoulou (1977) outlined the importance of land systems as

> ... a network of (often institutionalized) human relationships pertaining to the control and use of the land as a productive resource and as wealth has everywhere and in all ages, formed a decisive or at least conditioning fundamental support to the superstructure of the wider social, economic, and political system.

The land system is extremely important for Nepal as 94 percent of the population are farmers. However, land distribution in Nepal is very skewed as Table 1 reflects.

Table 1. Household Landholding (1962 and 1972)

Size of landholding (hectares)	Percentage of area		Percentage of households	
	1962	1972	1962	1972
0.00 to 0.51	13.9	21.1	56.1	52.9
0.51 to 2.03	32.3	32.7	30.7	37.4
2.03 to 5.09	31.1	30.2	9.5	6.9
5.09 to 10.17	1.9	1.7	2.6	1.6
10.17 to 20.35	11.2	9.9	0.8	1.1
20.35 to 50.87	6.6	3.6	0.2	0.1
50.87 and above	3.0	0.8	0.1	-

SOURCE: Jain, 1985.

The years 1962 and 1972 represent the situation before and after the 1964 land reform in Nepal. Even after land reform about 53 percent of the households covered 21 percent of cultivated area while 13.5 percent area was taken by 1.2 percent of the households. It is also reported that of the total households 3.3 percent were landlords who owned 29.9 percent of the total cultivated land (Jain, 1985). This paper, however, does not include an analysis of the landless poor.

2 The land rent is fixed only in 12 Tarai districts in Nepal. Many districts still retain the traditional system of land rent where the tenant pays half of all the agricultural produce under tenancy. In some districts tenants pay land rent three times as much as the land tax (personal contact with one land tax officer, 1985). The type of land rent prevalent in a particular area and the production costs and returns illustrates the existing incentives to increase production.

From the tenants' view the larger the margin after paying costs and land rent, the higher the incentive. Since the costs, rentals, and gross incomes are always unequal in different areas, the incentives are not equal. The following is an analysis of incentives for the tenants and landlords under two alternative rental systems for two Tarai districts. The analysis is based on data available for the year 1981/82.

Data are not available to analyze the incentive structure over a longer period that takes good, poor, and average years in the same proportion as they naturally occur. Also, the two districts do not represent the Tarai as a whole. The smallest farm households received the highest net returns from both local and improved varieties of maize. The returns from improved maize were higher than from local maize. They lost less by growing wheat on unirrigated land than by growing it on irrigated land.

Table 2 shows the net return per hectare for local and improved late paddy, local and improved maize, and improved wheat in Dhanusa and Parsa districts, under irrigated and unirrigated conditions across different sized farmer groups. Usual crop rotations in these districts are irrigated local paddy and unirrigated wheat (Adhikary, 1974). Rotations such as irrigated improved paddy and unirrigated improved maize are a second possibility. The other rotations are irrigated local paddy followed by unirrigated improved wheat or irrigated improved paddy followed by unirrigated improved wheat.

The table shows that in Dhanusa the smallest farm households received the least net return upon growing local paddy in both irrigated and unirrigated conditions. They ranked higher in case of improved paddy under irrigated conditions. On unirrigated maize the smallest farm households got the highest net returns from both local and improved varieties. The returns from improved maize were higher than from local maize, and there was less crop loss by growing wheat on unirrigated land than by growing it on irrigated land.

Table 2. Net Return for Important Crops (NRs. per hectare)

District and strata	PADDY				MAIZE				WHEAT	
	Irrigated		Unirrigated		Irrigated		Unirrigated		Irrigated	Unirrigated
	L.	I.	L.	I.	L.	I.	L.	I.	I.	I.
Dhanusa										
I	1346	2092	1118	2644	NA	-	1242	3189	-431	-125
II	1441	2453	1198	2525	NA	-	862	3044	1402	104
III	2133	-	1243	2052	NA	-	976	2940	39	-334
IV	2082	-	1774	2906	NA	4896	843	437	177	75
V	1850	-	1572	-	NA	2755	1122	-	477	473
Parsa										
I	1366	1401	1556	2276	NA	-	95	NA	315	764
II	1368	1333	1443	2472	NA	-	1064	NA	175	1044
III	1661	2099	20	1800	NA	1031	289	NA	901	1122
IV	1940	2069	403	1748	NA	331	-	NA	1002	1364
V	1843	2815	1162	1815	NA	-	354	NA	1770	2002

Source: DFAMS, 1981/82. (L=local,I=Improved, NA = Not available).
strata I to V indicate increasing farm sizes.

In Dhanusa, under the half-half sharecropping the net income of the smallest farmers was NRs.1295 if irrigated local paddy and unirrigated local maize were grown. An equal amount accrued to the landlord. If land is not an hedge against inflation and also not a security for future the landowners receive NRs.1290 by keeping NRs.9593 on fixed account at the going rate of 13.5 percent. The price of one hectare cultivable land in 1981/82 was NRs.18,907 (based on Jain, 1985; Pradhan, 1984). In a large area of Dhanusa, improved irrigated paddy and improved unirrigated wheat is a common annual rotation. However, the smallest size group of farmers lost by growing wheat in 1981/82. Therefore, the returns they received are not analyzed for such a rotation.

In Parsa, an important annual crop rotation is irrigated local paddy and unirrigated improved wheat. The total net return from this cropping pattern to the smallest farmers amounted to NRs.2130 for one year. Under a 50 percent sharecropping the landlord received NRs.1065. This amount is far less than possible interest earnings for NRs.18,907 (assumed land price). In this case, the landowner lost from tenancy..

From the standpoint of the tenants in Dhanusa, annual income from irrigated local paddy and unirrigated local maize was NRs.1294.5 for a household. An average family size of 6.4 people needed other means of supporting the family at NRs.2.2 per head per day even for subsistence. Even if the land under tenancy were suitable for an annual rotation of improved irrigated paddy and improved unirrigated maize, the tenant had only NRs.2640 on per share to support a family.

Part of the supplementary income may come from wages for family labor deducted from the gross farm earnings, but the wage deduction of NRs.2230 in 1981/82 as reported by the Farm Management Study from those who received the best returns from farming is insufficient for subsistence.

In Parsa, similar results also are obtained if the returns from alternate crop rotations to the landlords and tenants are considered.

Furthermore, the tenants have to bear production costs which include the cost of improved seeds and fertilizers. Under sharecropping they are left with fewer incentives (Zaman, 1972). The benefit to cost ratio of using improved inputs has to equal two for the tenant to be indifferent toward investing in such inputs and not investing if no risks are involved. Even when the benefit cost ratio exceeds two it has to be high enough to be reacted upon by the farmer to positively contribute towards higher productivity. It is possible that this factor has played a role in stagnating agricultural productivity.

After land reform 20.7 percent of the households were classified as owner-cum-tenants (Jain, 1985). Therefore, many people belonging to strata II and III in Table 2 also belong to the category of poor. Their condition is under a 50 percent agricultural product sharing arrangement. In Dhanusa, a household of the second smallest farm size group received NRs.1151 per hectare upon growing local irrigated paddy and local unirrigated maize. The landlord received the same amount and is lower than in the case of stratum I. Thus, the analysis of stratum I, is also valid for stratum II. A similar situation is applicable for the tenants and the landlords of the third largest farmer group (stratum III).

Considering a fixed amount of crop payment at the rate of 15 maunds (one maund equals 37.32 kgs) per bigha (one bigha equals 1.67 acres) for class A land as required by law in Dhanusa, the tenant has to pay NRs.1735 (paddy price for 1982 is used). Even fixing land rent does not provide incentive to the tenant to expand production as only NRs.2588 is received after following a rotation of irrigated local paddy and unirrigated local maize. The tenant is forced to squeeze family labor income to meet the gap between a net return of NRs.2588 and the fixed rent of NRs.1731. This appears worse than 50 percent sharecropping where only NRs.1294 is paid on land rent. A similar situation exists in case of the strata II and III categories in Dhanusa.

In Parsa, under the fixed land rent system, strata I, II, and III face similar situation as in Dhanusa. If the incentives are not better in other places and for other years in these districts, the poor will remain destitute.

Foreign Exchange Overvaluation and Interest Rates

Since the poorest tenant households are not able to produce enough food even for subsistence, off-farm employment is very important. Landless people also need nonagricultural employment. About 49.5 percent of Chitwan families were landless in 1981 (Khadka and Lohani, 1981). Based on Chitwan figures, Nepal had 520,986 landless households in 1977, although this may be an overestimation. The issue of subsidized interest

rates and overvalued foreign exchange for capital import--especially those that substitute for labor, becomes important.

The interest rate as cost-of-capital can be assessed in two ways. One is the complex method of finding the demand for capital input through a production function analysis, matching it with available supply, and identifying the equilibrium rate. Under this method the dynamic forces (technological possibilities, relative changes in input, and product prices) that influence supply and demand need to be considered while making interest rate policies which will influence future demand for capital. The accounting problems with this strategy are formidable. Another way is to find out the supply of capital in excess of demand at the going interest rates and change the rates gradually to eliminate excess capital. As an example, in 1982/83, the banking system had a total deposit of NRs.6286 million and it was able to invest only about 71 percent of this deposit (Nepal Rastra Bank, 1983). The lending rates were alittle too high (assuming a ten percent cash to deposit ratio and five percent statutory reserve deposit). It is possible that the capital accumulation which helps create new jobs for the unemployed or underemployed is discouraged. The interest rates need to be carefully chosen, to design a industrial structure consistent with long-run comparative advantage or domestic resource costs (Hayami and Ruttan, 1971; Timmer, Falcon, and Pearson, 1980).

Within the present structure of interest rates it is possible to qualitatively analyze their likely impact on the poor. Table 3 shows the current interest rate structure.

Table 3. Current Interest Rate Structure (percent per year)

Item	Interest Rate	Remarks
A. Cottage industries	11	For industries up to NRs.0.8 million in fixed capital in urban areas and NRs.0.5 million fixed capital in rural areas.
B. Other industries (fixed and running)	17	
C. Agriculture sector		
1. cardamon, fruits, tea, etc.	10	
2. irrigation	12	
3. animals, birds, and fish	12	
4. for running capital	15	
D. Biogas plant	11	
E. Transport and other services	15	
F. Basic industries		
1. fixed capital	12	
2. running capital	15	

Source: Nepal Rastra Bank, 1985.

Cottage industries and biogas have the lowest interest charges in the nonagricultural sector. It is assumed that cottage industries have the lowest capital to labor ratio per unit of value added and they are employment oriented. But cottage industries such as wool knitting, carpetmaking, and garment factories have strong links outside the country. All cottage industries are not equal in overall domestic employment generation. They need to be further classified with respect to employment generation potentials and priorities need to be accorded to those that require relatively more labor, to help the poor.

In the agricultural sector and in "basic industries" running capital has higher interest charges than the fixed capital but it may be that running capital generates relatively more employment than fixed capital.

Basic industries are charged lower interest rates. Which of the industries receive "basic" classification and which are the "others" is important. Basic industries are defined as those which substitute for imports or enhance exports. Over the long run any industry either substitutes imports or enhances exports and falls into the basic industry category. Questions such as which industries employ comparatively more semiskilled labor needs to be assessed in more depth to restructure interest rates to the advantage of the poor.

The currencies of many developing countries are generally overvalued. This is true for Nepal where black markets for foreign exchange exist (Lohani, 1985).

Overvaluation of exchange rates makes the import of equipment cheaper, which in turn helps make more jobs available. But the items that replace labor enter the country if they are not identified and restricted by other means. Simply overvaluing the currency is not in the interest of the poor. Just as with very low interest charges, an overvalued currency over time helps prohibit factor use according to comparative advantage. Recent trends in capital equipment imports and their nature should be studied to find out whether low interest rates and overvaluation of the currency increases domestic employment or otherwise. If overvalued domestic currency is used to import consumer goods, it provides cheaper consumer goods at home but discourages domestic employment and production of such goods.

A tangential point is that receiving foreign food aid is equivalent to receiving very cheap food imports and is a recurring event in Nepal. Food aid discourages domestic agricultural production by depressing prices. Discouraging domestic production stimulates unemployment and again does not help the poor.

Growth and Equity

In Nepal, growth and equity are implicitly assumed to move together considering the emphasis laid on higher agricultural production by various five-year plan targets. This is possible if increased production comes from increased labor employment per unit area. But when the area and production under major crops are considered in the recent past, production has increased with a declining average yield (Jain, 1985). Incremental growth in labor is mainly used to bring more marginal land

under the plough, which results in declining labor productivity. This is a strong force helping increase the number of poor.

To the extent that improved farm practices on good land are adopted, labor productivity increases because more labor is used under these practices (Pudasaini, 1980). It may be that the factor share of labor increases at the microlevel in some areas but is not enough to keep pace with growth in population. This is a likely situation in Nepal, because except for wheat, the adoption of improved farm practices is very slow.

As indicated earlier, foreign trade as a source of economic growth has a limited scope for Nepal, despite Nepal's tradition of rice exports. If producers are the exporters they gain by increased export (Castro and Schuch, 1984). In Nepal, the secondary rice markets are oligopolistic with a small number of dominant big millers and wholesalers (Karkee and Munankami, 1984). Exports are likely to benefit the traders rather than producers. Even if the producers receive some gain the poor cultivators are usually excluded as they do not have much surplus to sell. Unless the market structure is changed, Nepal's economic growth as led by small rice exports cannot help the poor.

Price Policies

Price policy is a mechanism which encourages production of specific commodities if the minimum price is effective. Questions such as the impact of price policy for one product on other commodities, on resource conservation, on funds, and on administrative capacity needs careful study. The minimum prices should be such that farmers consider them sufficient to act on, at least covering production and transport costs to the level where the lowest (floor) price is paid. Regarding the poor, price policies need to cover the crops they produce and consume (finger millet, barley, buckwheat, and sorghum).

In Nepal, the floor prices are fixed only for paddy, wheat and jute, (prices were fixed only once for maize). Considering the complexity of factors to consider while fixing support prices, developing effective price policies in Nepal is an extremely difficult task (see Gautam, 1984 for a list of these factors). In the past, market prices were consistently higher than the floor prices, thus, the minimum prices at best reduced the risk of serious loss for farmers if the market price went so low that they were unable to recover a substantial part of their cost of production. These risk reductions are not enough for the small farmers as many of their crops are not covered. To quote the Agricultural Development Bank (ADB, 1982), "small farmers have seldom benefitted from the support price."

Subsidized foodgrain distribution is an indirect price policy. However, the distribution of subsidized foodgrains in the Kathmandu Valley and other hill areas has the general effect of depressing the producers' prices (ADB, 1982). The subsidized foodgrains are mainly rice and wheat. Subsidizing these items discourages the substitution of cheaper gains (maize, millet, buckwheat, and barley for rice and wheat). As a result, these poor farmer's crops are indirectly discouraged. The price subsidies that encourage higher consumption levels of paddy and wheat are contributing to higher profit for the oligopolists.

About 80 percent of subsidized foodgrain is rice bought in the Tarai. Kathmandu Valley receives the highest amount of per capita subsidized food. The farmers around Kathmandu Valley do not have much incentive to produce more paddy owing to unfair competition from the Tarai paddy. Those hill farmers who are market-oriented are also discouraged by the distribution of subsidized food within the district town centers. The present subsidy mechanism isolates the agricultural sector from the influence of incentives provided by the price system and dampens rural-urban market coordination. Both the poor farmers and the general adjustment between long-term supply and demand are adversely affected.

Input subsidies as a price policy mechanism also provide incentives to producers if product prices are fixed or at least stable. Table 4 illustrates the likely impact of input subsidies. It shows that during the Sixth Plan (1980-1985) improved paddy, maize, and wheat seeds distributed by the Agricultural Inputs Corporation fluctuated between 1824 and 5641 metric tons. Fertilizer distribution grew consistently over the same period and has nearly doubled in five years.

Table 4. Use of Improved Seeds, Chemical Fertilizers, and Productivity

Item (mt)	Year				
	1980/81	1981/82	1982/83	1983/84	1984/85
Improved seeds	1824	2566	5641	3000	2550
Chemical fertilizer	22458	23817	31279	37299	41000
Productivity index	1.00	1.02	0.83	1.04	0.97

Source: HMG, Economic Survey 1984, 1985.

As the behavior of improved seeds and productivity index appear erratic despite increasing use of chemical fertilizers, either the use of fertilizers is insignificant as reflected in the productivity index or fertilizer is not being used in the fields. If the cropwise targeted fertilizer distribution during the Sixth Plan is considered, the crops commonly grown by the poor farmers are excluded (ADB, 1982).

Nepal spent NRs.689 million on subsidizing fertilizers between 1970/71 and 1979/80 of which about NRs.35.33 million went to hill farmers (ADB, 1982). With about one-third of all cultivated land in the hills, this figure shows that almost all of the subsidized fertilizers went to Tarai farmers who are generally better off than their hill counterparts. This is a perverse situation in the light of the regional distribution of poverty. Within the Tarai, if the risk averse nature of small farmers toward adopting improved technology is considered, the large farmers benefit most from the fertilizer subsidy. However, some wage earners in the Tarai also benefit from increased jobs generated by subsidized fertilizer if it is used on the fields. (Informed sources report that the fertilizers are smuggled into India for resale).

In sum, the broad institutional setting for poorer cultivators is that they do not have adequate incentives to increase crop productivity because of current land rents. Price policies, food and fertilizer subsidies, and the rice market structure do not directly benefit them. The employment impact of input subsidies on poor farmers is not adequately understood, as with interest rates and foreign exchange overvaluation. All these factors deserve further study.

Strategic Institutions

Within the broad institutional setting for agricultural development, there are a number of strategic institutions within public sector. If inherent contradictions exist between development goals and general institutional setting, the efforts of these strategic institutions have only a marginal impact on the rate of economic development. They do not assist the poor even if their normal operating procedures are unbiased toward them. However, the number of strategic institutions and their activities does reflect the organizational capability of the country to translate national goals into acheivements when the broader institutional setting is considered.

Agricultural Research

Agricultural development entails the development of suitable technology and dissemination of knowledge. Supporting services of credit, market information, input supply, contract enforcing, as well as standard weights and measures are also needed (Mosher, 1966). Agricultural research is simply one important part of the process. Given a workable level of other necessities, agricultural research accelerates agricultural development.

By 1982, there were 18 crop research stations, 12 livestock research farms, 20 horticulture research stations, seven commodity research projects, six fisheries research stations, and a National Crop Research Complex (ADB, 1982; these figures include the Agriculture and Animal Science Institute facilities).

The share of public funds for agricultural research devoted to the poor farmer's crops indicates the degree of research effort toward understanding poverty. Table 5 illustrates the relative research resources by broad crop categories for five years beginning 1975/76.

Cereals received the highest share of total agricultural research expenditure followed by horticulture, forestry, and livestock. Sharma, (1983) summarized the situation by asserting that investment in agricultural research is low, generally biased towards cereals and cash crops. The livestock sector is comparatively underinvested and there is a lack of data needed to improve planners' judgements on allocation of research budgets. The allocations do not match potentials as judged by their share in agricultural GDP.

Very low allocation to livestock research points toward the fact that job creation rates for the poor are very low because livestock raising is more labor intensive than grain farming (Mellor, 1974).

Table 5. Allocation of Research Funds by Area

Item	Cereals		Horticulture		Livestock		Fisheries		Forestry	
Percent of	AGDP	TARE	AGDP	TARE	AGDP	TARE	AGDP	TARE	AGDP	TARE
1975/76	0.2	79.7	0.2	9.5	0.0	3.1	0.2	1.6	0.2	6.1
1976/77	0.3	80.9	0.2	6.6	0.0	2.9	0.4	2.3	0.2	7.3
1977/78	0.3	82.8	0.3	6.9	0.0	2.9	0.3	1.5	0.2	5.8
1978/79	0.4	84.8	0.3	5.8	0.0	2.3	0.2	1.2	0.3	5.9
1979/80	0.4	83.2	0.2	0.4	0.0	2.8	0.2	1.0	0.2	7.5

(AGDP= Agricultural GDP; TARE= Total Agricultural Research Expenditure)
Source: Sharma, 1983.

With cereals and pulses, Table 6 shows the allocation during five years beginning 1975/76. Although in terms of potential paddy is the most dominant crop, allocations to paddy, maize, and wheat are closely comparable in absolute terms.

Table 6. Share of Research Funds for Various Crops ('000 NRs.)

Crop	Year						
	1975/76	1976/77	1977/78	1978/79	1979/80	Total	Percentage of total area
Paddy	2374	4749	4879	6459	4699	23160	52
Maize	3006	3770	4635	6428	5079	22918	18
Wheat	2439	3656	4620	5770	4113	20598	14
Millet	30	35	55	67	70	257	5
Barley	104	92	100	106	113	515	7
Pulses	48	68	71	95	103	385	-
Others	73	100	86	117	66	442	4
Total	8074	12470	14446	19042	9164	68275	48

Source: Sharma, 1983.

Emphasis on maize helped the poor in the sense that maize is a dominant crop in the hills. Most of the direct benefit from research on paddy and wheat has likely helped the larger Tarai farmers. Research on paddy and wheat has perhaps indirectly benefitted the poor in the Tarai through increased labor need. Increasing research resources on labor intensive crops is an important strategy for Nepal (Babylon, 1979).

The labor requirements for various crops are assessed to identify potential job opportunities for the poor. These potentials are best reflected through the present labor use for various crops. Table 7 shows employment for several crops in 1982/83.

Table 7. Employment by Crops in 1982/83

Man days

Crop	Improved Paddy	Improved Wheat	Improved Maize	Improved Jute	Improved Sugar-cane	Local Pota-to	Local Millet
Man days per ha	161	126	160	220	278	255	202

Source: DFAMS, 1983.

Sugarcane, potato and jute are respectively the most labor intensive crops. However, local potato and improved paddy on a yearly rotation employs the maximum labor. With careful varietal selection a yearly rotation of improved jute, improved paddy, and local or improved potato is also possible on irrigated Tarai land. Therefore, from an employment angle, the current research emphasis on paddy is a positive factor, but potato should also be emphasized as the climatic condition in Tarai is favorable. For the hill uplands a potato and improved maize rotation is good to suit the climatic conditions.

The labor use figures imply that research emphasis on potato should be increased for helping the poor both in the hills and the Tarai.

Agricultural Extension. Technical knowledge is an important factor hastening the adoption rate of improved technology. Its dissemination also affects the risk perception of farmers and modifies their decisions. Reduction of risk perception is important as the majority of Nepalese small farmers are risk averse (Hamal, 1983).

Common extension methods include trainings, visits, and demonstrations. The effectiveness of agricultural extension is evaluated by the bottom line of increased production. By concentrating on big farmers the targets are met with minimum effort (economies of scale). This is an inherent factor that causes extension activities to center on the interests of larger farmers. The economies of scale in extension activities work against the poor if the job evaluation criteria of extension workers is not changed. Other considerations such as housing and social prestige also encourage extension workers to help the big farmers.

Irrigation Development. Irrigation is developed by both public and private sectors. The private sector receives substantial technical help from public organizations. Needless to say, private sector irrigation facilities are developed by larger farmers for reasons of economic feasibility on private account.

The area made irrigable by the private sector was estimated at 400,000 hectares in 1981, which is four times bigger than that by the public sector (ADB, 1982). This reflects the income distribution implications of irrigation availability, although the poor do benefit from some employment opportunities.

Of the 100,000 hectares made available by the public sector, 90 percent are in the Tarai serving less absolutely poor people. However, the cost per unit area involved in the Tarai may be less than in the hills.

Within the Tarai, the selection of project site and the routing of canals may be a "technical matter." Thus, institutional practices in relation to poor farmers are not discussed because information on canal routing is seen as more important. This limitation shows the need for information on income distribution from irrigation.

Small Farmers Development Projects (SFDP)

Initially begun as two projects in 1974/75, the SFDP had 143 projects in 1985. This is progress for small farmers who comprise the bulk of the poor. An 1980 evaluation suggests that the program does little for the landless poor (Nepal Rastra Bank, 1982).

The small farmers receive more help with SFDP than without, and SFDP is a step towards reducing absolute poverty in Nepal. But, if the factors that favor richer farmers are not reformed by changing current institutional settings and practices, the gap between the rich and the poor is likely to widen, while absolute poverty is slightly reduced.

A remarkable feature of the SFDP is that about 60 percent of the capital expenditure goes toward livestock. This is helpful for income, employment, and the nutrition of the poor. Loans received by small farmers are used to buy animals mainly from within the country. This is simply a transfer of productive resource from one farmer to another and does not entail a net increase in better nutrition or employment (based on discussion with SFDP In-charge of Chitwan). Also, investment on livestock by small farmers needs to be investigated in the context of soil conservation problems, as animals hasten the rate of soil erosion. Poor farmers generally own more marginal land where the soil is erosion prone. If the SFDP does not take these factors into account the projects may not have much long-term impact. Other factors such as the competition between humans and livestock for foodgrain and the effects on sanitation also need to be considered when assessing the SFDP.

Agricultural Credit

Agricultural credit is a very important factor in aiding the adoption of newer agricultural technology, especially those involving modern inputs. It is made available to farmers from private sources and strategic institutions. The share of institutional credit in total agricultural credit is estimated at 24.0 percent (ADB, 1982). Institutional credit is handled by the Agricultural Development Bank, Nepal through cooperatives or sajhas and by commercial banks. The Bank is the largest institution with about five times more outstanding loans than all other banks taken together in 1976/77 (ADB, 1982).

Table 8 shows the structure of lending by the Bank. Only 9.9 percent of the marginal farmers and 23.1 percent of small farmers obtained some credit from institutional sources.

Table 8. Institutional Credit to Various Farmer Groups

Farmer Category	Proportion of farm families	Proportion of land held	Proportion of total credit
Large	42.8	42.0	73.6
Medium	30.4	24.0	15.6
Small	23.1	26.0	7.9
Marginal	9.9	8.0	2.8

Source: ADB, 1982 (compiled from Appendix Tables 4.10 and 4.11).

As a part of their standard operating procedure the institutions lend money on the basis of program feasibility and accept land as collateral. They are likely to extend more credit to the larger farmers. The share of institutional credit received by large farmers is proportionately more than their share of landholding (Table 8). As repayment performance has deteriorated over recent years because of the difference between nominal and real interest rates, and from political factors, these institutional resources mainly help the rich (ADB, 1982).

The ADB total outstanding credit on individual basis through cooperatives and through SFDP in Chitwan by November 1985 was NRs.35.22 million. Of this, NRs.18.93 million or 53.7 percent was lent on an individual basis. The lending through cooperatives was 40.1 percent and that through SFDP was 6.2 percent.

Since the SFDP share of loans is only 6.2 percent and individual loans are likely to be biased to large farmers it is useful to see if the cooperative loans as well are biased toward large farmers.

Two cooperatives, namely Mangalpur and Saradanagar in Chitwan, were selected for analysis. A list of individual borrowers was obtained, and a random sample of 20 percent was selected to discover the total landholding of individual households. These households were classified into two groups--those having less than 2.67 hectares and those with at least 2.67 hectares. (This size grouping is the same as is used by SFDP to define small and large farmers). Table 9 displays the distribution of outstanding loans as of November 1985.

Table 9. Households by Landholding Size and Loan Situation

Name of Cooperative	Farm size (ha)	Number of farms	Total land (ha)	Total loan outstanding (NRs.)	Ave. land (ha)	Ave. loan outstanding (NRs.)	Ave. loan
Sarda-	§2.67	69	70.53	92357	1.02	1338.5	1312.3
nagar	¶2.67	38	148.21	72717	3.90	1913.6	490.7
Mangal-	§2.67	73	69.44	142371	0.95	1950.3	2052.9
pur	¶2.67	6	16.28	31482	2.71	5247.1	1936.2

The average outstanding loan per large farm is NRs.1914 in Saradanagar and that per small farm is NRs.1338.5. In Mangalpur, the average outstanding loans received per large and small farm are respectively NRs.5247 and NRs.1950. On a per household basis large farmers have obtained more loans than small farmers. On a per hectare basis, however, large farm households received less credit than small farm households. This shows that the loan distribution in these two cooperatives is not disproportionately is favorable toward large farmers. (Nevertheless, the direct ADB lending to individuals is 53.7 percent of the its total lending and this can offset the relative share of ADB loan received by the small farm households and the large ones).

This finding implies that the poor received relatively more help from cooperatives in the study area. However, other areas also need to be studied before generalizations are made.

CONCLUSION

Summary

Judging from the caloric gap between minimum subsistence needs and food availability, an estimated 36 percent of the population are considered absolutely poor. They shared only 13.2 percent of the aggregate income in 1977. In general, the incidence of poverty is highest in the mountains, hills, and the Tarai, respectively.

More absolutely poor people live in rural areas than in urban areas. From a regional point of view the Far-Western region (current Mid-Western region included) has the maximum incidence of poverty. It is followed by Western, Eastern, and Central regions. An average dweller in the Far-Western region lives near starvation and is able to meet only alittle over 50 percent of the caloric need for subsistence.

In 1977 Jain predicted that about 45 percent of Nepal's population would be absolutely poor in 1985. However, there are reasons to believe that the proportion of absolutely poor people in 1985 is larger than anticipated.

The problem of poverty has to be addressed by public policies primarily because nearly half of the present population is absolutely poor, and conservation of the land resource base in Nepal is vitally important.

The institutional setting (including macroeconomic factors) is more important for development than the strategic institutions such as research, extension, input and output markets, credit, irrigation, and SFDP. If the institutional setting is not helpful for the poor,. the effects of these strategic institutions are negligible. The land rights are also unfavorable for the poor. However, more reliable and representative data need to be analyzed on these questions.

Growth in rice exports does not help producers and it does the least for poor farmers. Commodity price policies and input subsidies are generally not aimed at the poor but they may have an indirect positive effect on labor employment. The net effect is not known as with the case of interest rates and currency overvaluation. Comparative advantage of

employing existing surplus labor is overlooked by existing public policies. More reliable data needs to be gathered before an informed judgment on institutional design is made. Even to make changes in some of the procedures of a few strategic institutions more reliable information is needed. This preliminary assessment simply points towards the possibility that the current institutional practices, with the possible exception of agricultural research, cooperative credit, and SFDP, are not helping the absolutely poor. The Small Farmers Development Program is a ray of hope for the poor, but the projects exclude the landless poor, and the Program itself is not likely to reduce the gap between the big and small farmers if not also accompanied by institutional changes. Moreover, the performance of SFDP with respect to nutrition, production, and conservation needs careful scrutiny.

Empirical data based on two cooperatives indicates that the ADB loans distributed through cooperatives are not disproportinately biased towards large farmers if the loan per hectare is considered.

Except for the cooperative loan distribution, this paper is only a general analysis with a broad perspective of agricultural development with special attention to the poor. Besides raising a debate on absolute poverty or advantage of such an exercise is to identify areas for further research in a holistic framework.

Recommendations

The following issues need to be researched to improve policies directed toward reducing absolute poverty.

1. There are two main types of land classification--lowland and upland. Each class in turn has four subclasses. A different land rent for each subclass is fixed by law for 12 Tarai districts. In other districts there is 50 percent sharecropping or the tenant gets 75 percent of the farm produce or the tenant pays the landlord an amount equal to three times the land tax. In addition, there are different arrangements for sharing the direct cost of production. All these types of rent provide differing levels of incentives to tenants and landlords to increase production. A comprehensive study examining the incentives for each group of participants would be helpful.

2. It is necessary to study in-depth the impact of interest rates and exchange rate overvaluation for future policy guidelines. Of specific interest is to assess whether the current interest rate structure is helping to create jobs. Similar aspects of foreign exchange overvaluation also needs to be assessed.

3. The impact of subsidized inputs on income distribution needs more research. It is useful for policy purposes to know whether the poor are receiving a reasonable share of income generated through subsidized inputs.

4. It is very helpful to identify the crops where farm incomes can be increased by employing relatively more workers. The research and extension focus should be directed toward crops which simultaneously improve farm incomes and labor use. This research must also consider the inflow of seasonal labor from India.

5. Empirical evidence shows that channeling institutional credit through cooperatives helps the poor. However, the problems faced by cooperatives need to be studied before suggesting any changes.

6. The SFDP needs to be studied using a holistic framework and the programs that are likely to increase domestic incomes on a sustained basis identified and expanded.

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