PRELIMINARY

Analytic Papers

Country Studies

of the Rural Poor

TAIWAN

TUNISIA

Prepared for
The Administrators Evaluative Review
on
Foreign Assistance and Rural Poverty

Work Order No. 17
Contract AID/CM-otr-C-73-198

ATAC
AMERICAN TECHNICAL ASSISTANCE CORPORATION
7655 OLD SPRINGHOUSE ROAD, McLEAN, VA. 22101

A SUBSIDIARY OF

GENERAL RESEARCH CORPORATION

Analytic Papers

PROGRAMS TO AID THE RURAL POOR

- ECONOMIC GROWTH
- AGRICULTURAL PRODUCTIVITY
- WELFARE
- INTEGRATED RURAL DEVELOPMENT

THE TAIWAN AND TUNISIA EXPERIENCE

Prepared for
The Administrators Evaluative Review
on
Foreign Assistance and Rural Poverty

Work Order No. 17
Contract AID/CM-otr-C-73-198

ATAC
AMERICAN TECHNICAL ASSISTANCE CORPORATION
7655 OLD SPRINGHOUSE ROAD, McLEAN, VA. 22101

A SUBSIDIARY OF

GENERAL RESEARCH CORPORATION

Analytic Paper

TAIWAN - TUNISIA

A. BACKGROUND

Both Tunisia and Taiwan became colonies in the last years of the Nineteenth Century and continued that status for the first half of the Twentieth. Each received major U.S. development assistance for approximately seventeen years (Taiwan from 1949 to 1965; Tunisia from 1957 to 1973).* Other similarities are hard to find; Table 1 summarizes their divergences.

The Japanese, who occupied Taiwan from 1895 to 1945, transformed a traditional agricultural society to a modern one. In the process they carried out an agrarian reform, developed a technology network of universities and experiment stations, organized farmers' associations as two-way delivery systems, and created infrastructure and processing industries. The French, whose suzerainty over Tunisia extended from 1881 to 1956, created a modern agricultural society in the North, managed by French colonists. They organized and managed the government and provided essential infrastructure and services, but did little to prepare Tunisians for technical and management positions and virtually ignored the Center and South.

The Rural Poor

At the end of World War II, the Taiwanese rural poor were nearly all small farmers (roughly those tenants or owners with less than one hectare of good quality land). Despite the small size of their holdings,

*Aid to Tunisia continued but our analysis of AID programs stopped in 1973.

Table 1

Summary Characteristics of Taiwan and Tunisia

	TAIWAN	TUNISIA
Population	10 million (1957)	4.5 million (1966)
Growth Rate	3.3%	2.5%
Land Area	3.57 million hectares	16.4 million hectares
Arable Land	1.05 million hectares	5.3 million hectares
Arable Land/Capita	0.09 hectares (1962)	1.2 hectares (1966)
Arable Land/Farm Family	1.4 hectares	14.3 hectares
Average Annual Rainfall	2600 mm	200 - 600 mm
Degrees of Latitude	22°- 25°	31° - 37°

TAIWAN

	1951	1957	1964
GNP/Capita (1964 Dollars)	$ 106	$ 104	$ 187
Agricultural Production Index	100.0	147.7	200.5
Industrial Production Index	100.0	229.0	533.3

TUNISIA

	1961	1966	1971
GNP/Capita (1966 Dollars	$ 201	$ 218	$ 262
Agricultural Production Index	100.0	107.1	134.1
Industrial Production Index	100.0	108.1	183.9

they were managerially competent, generally modern farmers who used family labor to intensively farm their owned or rented properties. In 1948, 40 percent of the farmers were tenants, while 60 percent of the farm owners controlled less than one hectare of land.

The Tunisian rural poor, at independence, were mostly farm hands, herdsmen and dry farmers of traditional orientation. Illiteracy was high and experience in productive agricultural management was limited. The land they worked or used belonged to others or was communally held.

Development Patterns

The courses which each country followed over the seventeen years of A.I.D. support were quite different in their approaches to the well-being of the rural poor. But conditions were also quite different.

In Taiwan, with a disciplined and entrepreneurial farmer, a store of underutilized technology and a cadre of qualified professionals, the choice was to provide the farmer with rough equity in land, arrange an effective delivery system for social and economic services, and try to stay ahead of him with technology and markets. Overall economic growth was the primary goal - income redistribution was not a Chinese priority - and agricultural production was geared to that goal. Agriculture was expected to do the traditional things: (1) Provide food and raw materials, (2) provide labor for other sectors, (3) provide foreign exchange, and (4) provide enough savings for its own continued development.

The formula worked in Taiwan, stimulated by a foreign assistance investment fund capably managed by JCRR. The economy grew, agriculture prospered and met the requirements laid upon it. In the process, all levels of the rural population participated in the general prosperity. Incomes grew, but there was little income redistribution. Income of the larger farmers grew more than the average, presumably because of the workings of compound interest. Incomes of the smallest farmers also grew more rapidly than the average, presumarly because of off farm employment.

The poorest of the Taiwanese rural poor were helped by improvements in equity and services that increased productivity, but the ultimate solution has been off farm employment in manufacturing and service industries.

Tunisia's situation was entirely different. Two-thirds of its agriculture was traditional and the country immediately lost, and was unable to replace, much of the technical and managerial resources which made the other third productive. Its rural inhabitants were for the most part neither market oriented nor productive. The government's technical and administrative resources were limited. Its physical resources were poor, even compared with Taiwan's. Above all, it was faced with the immediate task of nation building.

The pattern Tunisia chose was to effect an income redistribution, coupled with an investment program designed to create a more independent economy, extend the modernization process and provide employment.

The agricultural sector didn't grow and acted as a drag on the rest of the economy, but an income distribution was effected. Although it tried, the government was unable to improve land distribution materially nor to provide the technical and managerial resources to modernize the rural sector. Its attempt at maintaining production and organizing the sector through cooperativization was aborted.

Much of the income redistribution was effected through the provision of social services and, when investment failed to create enough jobs, through the creation of employment in government, state cooperatives and food-for-work projects. Employment creation efforts in the rural sector were non-competitive with investment-induced employment opportunities. They were also devoted to development efforts whose impact requires a long time to be felt.

It is too soon to tell how the Tunisian approach will work out for the rural poor. The modernization of traditional agriculture is a very

slow process. Even in Taiwan, where the Japanese had full control, a strong production incentive and their own extraordinary development experience to guide them, agricultural productivity hardly moved for 25 years. The Tunisians have not concentrated enough on building technology, but, here too, 17 years is a short time to create a modern educational system to provide the staff to perform the research to generate the information to be extended and finally adopted. Neither have they affected a distribution of land resources, but this was a conscious decision based on an assessment of available farm management capability.

Foreign Assistance

When reduced to a per capita basis, the total foreign economic assistance provided to these two countries by the U.S. was comparable in quantity but significantly different in nature:

	TAIWAN	TUNISIA
A.I.D. and Predecessors	8.35	5.22
Food for Peace	1.71	5.85
Title I	1.07	2.06
Title II	.64	3.69
All U.S. Economic	10.06	11.22
Other Economic	.40	3.87
Total Economic	10.46	15.09
U.S. Military	14.41	.69
Total, All Sources	24.87	15.78

These are heavy inputs which have made a distinct impression on the economic situation in both countries and have undoubtedly had an effect on the rural poor. However, it is difficult to trace the causality of foreign assistance in its effects on the wellbeing of the rural poor for two reasons: (1) Few foreign assistance activities in either country were directly targeted at the rural poor, and (2) both the volume of foreign aid and the U.S. control of aid-financed programs was limited, relative to national contributions and influence. In Taiwan, the Joint Commission for Rural Reconstruction (JCRR) was totally financed by the U.S. However, its work covered the entire rural sector and not just the rural poor. Moreover,

counterpart contributions to its projects from benefited agencies averaged 48 percent, while non-project effort of these agencies directed towards similar ends was many times as large. The U.S. permanent staff of the JCRR never exceeded 13, while the Chinese staff grew to almost 250, with more than 100 professionals.

The Tunisian Food for Work program was directly targeted at the rural poor, and the basic concept was of U.S. origin. But the program was managed by Tunisians who selected both the projects and the beneficiaries. The sizable U.S. contribution of food was only 26 percent of total program costs.

B. ECONOMIC DEVELOPMENT

The rate of economic growth may very well determine the ability of a nation to deal with the problems of the rural and urban poor. Growth can provide the revenues to finance the development and extension of productive technology and lead to the investments in water resources development and input production which that technology requires. Growth generates the demand for products which poor farmers may produce. Growth generates revenues which can provide the health, education and other welfare services to the poor. Growth also provides an ultimate solution to the fundamental problem of the rural poor, since it creates industries and off-farm employment to make the rural poor both less rural and less poor.

Economic development is an essential condition, but not a sufficient one. There must be a conscious effort to create the conditions under which the rural poor may participate in the fruits of economic development. Such conditions may require structural reform of social relationships and redistribution of land to provide the basic security and incentives for small farm production. They most certainly require the development of an effective network of channels and communications which place the small farmer in touch with unbiased market forces, technical and economic information, inputs, consumer goods and credit. They require the development of a set of sources for technical information and productive inputs. And they require a way of organizing individual farmers into groups which can provide

them some economies of scale in obtaining goods and marketing their output and which can offer them some degree of influence over programs and policies which affect them.

GNP grew at an average annual rate of 4.2 percent in Taiwan, 4.5 percent in Tunisia. The Taiwan economy started from a larger base, with a more suitable structure and more favorable resources, so the larger pie could be more easily shared. Moreover, the Chinese did spectacularly well in assuring all of the conditions of sharing. They immediately effected a land reform which provided the essential incentives. They rapidly expanded their technology establishment, arranging for the availability of both technology and inputs. They reformed and improved the farmers' associations and saw to it that these associations served as the primary means of transmitting information and goods, attaching a variety of programs to them. The hierarchy of association levels also helped to establish the network of channels and communications with all levels of government and economy. They invested heavily in rehabilitation of land, in reclamation and irrigation in order to maximize their scarcest resource, and also in the technology of the use of water and multiple cropping. These programs were directed at the entire small farm sector, and helped the poor and not so poor alike.

Tunisia tried to effect some of the same reforms but fell far short of the Chinese model. They transferred some land resources, but achieved no general redistribution. In recognition of the technical and managerial deficiencies of traditional farmers, they sought to organize them into a structure - state cooperatives - which could provide management, technology, essential services and training, but were unable to provide the quality of services, management, technology or training required. Starting with a weak technology establishment, they were unable to generate in the study period an adequate cadre of professionals nor a significant improvement in technology. The agricultural sector did not grow during the Sixties, partly due to management, but also because of inclement weather. The government expanded the availability of social services and resorted to relief measures to improve the distribution of income, and were moderately

successful. It seems evident that Tunisia can maintain a satisfactory rate of economic growth. The welfare services she provides, while still limited, are far superior to those available before independence. What remains to be seen is whether a rural structure can be created which will permit the viable rural poor, mostly small farmers, to contribute effectively to their own wellbeing and that of the nation.

Most of the assistance effort on Taiwan went to foster overall economic growth. Close to 80 percent went to industry, transportation and other infrastructure, and large agricultural construction activities. Only one-fifth went to agricultural, rural development and welfare services. Economic aid to Tunisia also had a strong economic development component, but activities related to agricultural production were a close second, and most non-project assistance went to the rural sector as a welfare function.

C. PROGRAMS TO IMPROVE AGRICULTURAL PRODUCTIVITY

Agricultural productivity, defined as yield per hectare, is the resultant of natural resources, productive inputs (fertilizer, water, seed) and management and cultural practices, all of which may be leveraged with credit and mechanical energy.

It is axiomatic that the long term improvement of agricultural productivity requires a system for research and development of genetic materials and cultural practices and a means for transmitting these materials and information to the farmer. The economies of scale involved in research and extension have generally led the state to assume responsibility for these functions. Both services require professionally trained personnel and the state has usually supported educational activities to produce these professionals and technicians. A good deal of AID's agricultural sector activities have been directed towards creating or strengthening this agricultural technology establishment or in other efforts to improve technology and its delivery.

The value of the output of these institutions to agricultural productivity and economic growth may be difficult to prove but is generally

accepted. No agriculture has advanced persistently without effective programs of agricultural education, research and extension. However, the relationship between these institutions and the technology they engender and its benefit to the rural poor is extremely tenuous. The assumption is that most of the rural poor are farmers who will benefit from improved technology. This assumption is doubly dubious: (1) Most rural poor, even when they own land, are laborers and receive a significant part of their total income from off-farm employment. As laborers, they do not benefit directly from increases in productivity or prices. Their benefit is from the wages paid, and agricultural wages are notably unresponsive to farm profit levels. (2) Improvements in technology usually are accompanied by increased risk, increased capital costs and increased education requirements. The risks are less acceptable to the poorer farmers, while capital and credit are not available to most of the rural poor in the same magnitude as to their wealthier, entrepreneurial counterparts. Some form of state intervention is usually required if the small farmer is to survive or the wellbeing of the rural poor is to be improved (or not made worse!) by the direct application of "improved" technology.

Technology does have a significant beneficial impact on the well-being of both the rural and urban poor. Improved productivity results in a reduction in unit production costs, and hence helps to maintain reasonable food prices. And the rural poor purchase much of the food and other agricultural products which they consume.

The Taiwanese and Tunisian experiences don't provide a conclusive description of the impact on the rural poor of productivity-enhancing programs. However, what they do show certainly does not relieve the doubts expressed above.

In the Taiwan case productivity was enhanced and most small farmers benefited. The agrarian reform had eliminated the largest farms, so there was no overweaning competition from a particularly advantaged class. The small Chinese farmers were exceptionally competent receptacles for improved technology after 50 years of Japanese orientation, so productivity increases

followed rapidly on the heels of agrarian reform, and new technologies were quickly adopted.

The poorest of the small farmers - those with less than half a chia* of land - had to have off farm income in order to support their families, even though their productivity increased and their farming income grew. Clearly, there are physical constraints to the most productive conventional technology which may prevent attainment of income above the poverty level. One should also keep in mind that the income of these small farm families improved relative to that of other farm size classes because they sought and found off farm employment. They became less poor because they became less rural.

The Tunisians were strongly aware of the technological and managerial weakness of their small farmers and the need to maintain national agricultural production. This was the basic logic behind the formation of state production cooperatives based on expropriated French farms. However, the government overestimated its own capacity to maintain the productivity of these farms. They did little to improve their technology network during the study period and there is some doubt that this network could have been improved enough in the short run to offset that which was lost with the exodus of Europeans. At any rate there was no improvement in productivity. Most production cooperatives were unprofitable, but it is not clear how much of the loss was due to weak technology and how much to overinvestment, overstaffing, or other managerial deficiencies. What is certain is that Tunisian technology is weak and farm management, particularly among the small farmers, is not very good nor well prepared to recognize and adopt better technology.

Following the retreat from cooperativization, the reaffirmation of private property rights may provide the security which farmers need in

*One chia = 0.97 hectare.

order to invest in farm improvements. Such investments may include replanting of perennial crops as well as the application of new technology. These investments will be initiated by the more entrepreneurial, better situated farmers. Any logical production program of a government with balance of payments problems will support these entrepreneurial efforts first, pulled by the desirability of meeting national production requirements and pushed by the need to allocate limited staff resources to achieve maximum benefits. Under these circumstances, the small farmer is almost certain to remain small, traditional and poor.

The U.S. assistance program in both countries was strongly supportive of the technology establishment, particularly education and research. The outputs, in terms of usable technology adopted by farmers were much greater in Taiwan, where all other factors were more favorable. Note that Taiwan already had a long-established, and effective technology establishment of higher agricultural education institutions and research stations. It takes a very long time to convert a traditional teaching and research institution to an objective-oriented technology system. The traditional faculty accepts change slowly. Their students must be educated abroad in new concepts, return to campus and gain stature within the faculty before these new concepts have enough impact to reform the university. This is a sloppy process, like all political processes, and may easily consume a quarter century or longer.

D. WELFARE

Welfare programs come in two somewhat overlapping packages. One package, which includes education and most health activities, helps the individual to respond to opportunities for self improvement and to meet his obligations to society. The other package, which includes relief, some health activities and social security, reflects society's obligation to its less fortunate citizens. Both types of programs are essential to any society. In fact, the way in which a government encourages and prepares its citizens for and provides them with meaningful work and accepts responsibility for its dependents is the principal measure of its social value.

The effectiveness of welfare programs in producing a lasting improvement in the wellbeing of the rural poor depends not only on the welfare program but on the conditions which the welfare program is designed to alleviate. Health improvement, literacy and skills training permit the individuals affected to compete effectively for available employment, but cannot provide that employment. Public service jobs provide a means for distributing income in times of stress but do not cure the causes of stress.

Both of these governments have tried to fulfill their responsibilities to their respective societies, within their means and traditions, but their approaches have been different. Taiwan did not consciously seek income redistribution, but a general prosperity in which rural residents could share. Taiwan did not concern itself with unemployment problems (which, even with a large standing army and rapid growth, consistently exceeded nine percent), but relied on the traditional extended family relationship to ease the burden. The primary social services provided were education and health, and these were pervasive, even in rural areas. As a result, rural residents were able to prepare themselves for off-farm employment. A study of urban employees with farm background indicates that these employees found positions as clerks, teachers, and factory employees for which their education had prepared them.

Tunisia, as a part of its nation building program, consciously sought an income redistribution to help the poorest majority catch up. Very conscious of its unemployment problem, Tunisia steered its investment program towards job creation and used a variety of work-creating programs to effect the desired income distribution when not enough jobs materialized. They established a network of health centers throughout rural areas, and expanded their school system. In both of these endeavors, and particularly in vocational training at the farm level, they were hampered by the limited availability of professionals to develop programs and train middle-level staff. Lack of skills remains a problem in industrial expansion, and limits the ability of rural residents to find remunerative work in industry.

The U.S. supported health and education activities with project assistance in both countries, and relatively more in Tunisia where the need was greater. The largest welfare program of all was the Food for Work program in Tunisia. This employment generation project has gone on for a dozen years. Between 1958 and 1969 it distributed nearly 600,000 metric tons of semolina and provided 335 million man-days of employment. It had a direct impact on income redistribution. Spread across all the rural inhabitants it would approach D 3.00 per year, and it was focused on some of the poorest. The program may have helped some workers prepare for other employment and it may have had some investment benefits, but its major impact was to hold unemployment to manageable limits while other investment programs generated more permanent employment. How much longer such support must last is questionable. The original ten-year development perspective sought full employment by 1971. The current plans propose to achieve this goal by 1980.

E. INTEGRATED RURAL DEVELOPMENT

Agricultural production, on which nearly all rural residents must ultimately depend for their livelihood, is the output of a complex system. This system transforms natural resources (land, air, water) and productive inputs (water, seed, fertilizers) into useful products (food and fiber) through the application of cultural technology and the farmers' labor and management (which may be leveraged with capital, credit and energy). This basic system is fed by a number of subsystems which generate technology and extend it, provide the channels and conditions for exchanging farm products for inputs and consumer goods, provide the training and education required to staff the systems at all levels, and provide the other social services which keep the participants in the system healthy, happy and productive. The functioning of the system depends upon the adequacy and balance of incentives, risks and returns.

The art of rural development is to assure that all parts of this system are functioning effectively and are in balance with the needs of the people who operate within the system and the requirements of the external society for its products. Integrated rural development projects

attempt to provide or enhance simultaneously a number of different parts of the system which analysis has demonstrated to be deficient. Most commonly, these projects are applied regionally, or to a selected target group. This is usually a matter of convenience and limited resources; there is no reason why the nation's agricultural sector should not be considered as a whole system, with specialized regional subsystems.

This, in essence, is the way the JCRR dealt with the system in Taiwan. It used its participation as a planning agency to identify weak areas in the national system, and its resources (monetary, persuasive, and technological) to improve the balance. There is virtually no aspect of the system and its subsystems which was not touched in some way by JCRR activities. However, they were touched with sensitivity, in accordance with the need of the system and its environment in space and time.

Tunisian officials also felt the need for dealing with agriculture as a production system, but demonstrated less understanding and authority. The production cooperatives were intended to be integrated production systems which could maintain output while improving the wellbeing of their members, at the same time that the latter received instruction in modern farming. The underlying concept was all right, but it lacked completeness and faltered in execution. The state was not sufficiently informed nor endowed to make the system work and was forced to abandon this approach. It is now faced with the need to analyze the larger, less structured national system and its regional subsystems and devise policies and programs which can strengthen or reform them.