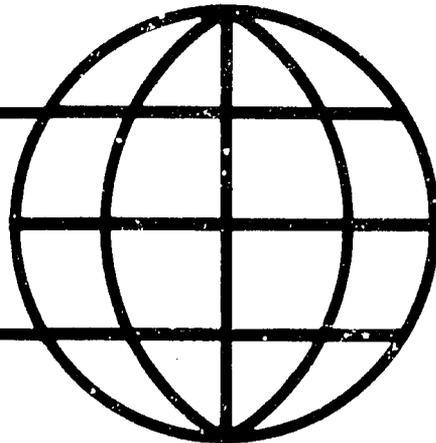


**COOPERATIVE AGREEMENT ON HUMAN SETTLEMENTS
AND NATURAL RESOURCE SYSTEMS ANALYSIS**

REGIONAL ANALYSIS, MARKET TOWNS, AND RURAL DEVELOPMENT

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Many of the rural development activities undertaken or sponsored by the U.S. Agency for International Development (USAID) are what we might call region or area based projects. They are designed to operate within a specific sub-national region -- usually a province, state or department, but sometimes a larger geographic or economic region such as a river basin, river valley or large economically depressed or isolated area. Projects so designed are intended to have a developmental impact on a specific region and to particularly benefit especially some segment of the population within that region -- usually, the poorer farm and non-farm households and workers.

Region based projects were a response to the realization that the macro-level national development plans and programs of the 1950's and 1960's were too ambitious and abstract. These national development plans were formulated at a level too far removed from "on the ground" development action to provide adequate guidelines for project identification, location and implementation. As a result, many countries began to adopt regional planning and development as a part of their overall development planning and programming. Some of these countries, such as Brazil and the Philippines, began to experiment with regional development authorities patterned after our own Tennessee Valley Authority. However, most regional development was carried out within the geopolitical confines of a specific province or state. Breaking national development into specific regional contexts reduced its complexity, helped to identify regional economic imbalances and helped to pinpoint specific regional problems and opportunities. In keeping with these developments and to aid and encourage

these developments, AID and other donors began to develop programs keyed to specific regions.

Unfortunately, there was a tendency in the beginning to go too far in the direction of comprehensive planning and development of these regions. Complex integrated area and regional development programs were planned, often under the name of integrated area or integrated rural development. These programs created very high expectations in the participating countries and the contributing donor agencies, but their scale caused massive problems and few have lived up to their full promise.

In attempting to progress in too many sectors simultaneously over too wide an area, the inevitable system overload developed. With some notable exceptions, host countries lacked the planning and management capacity to conceptualize and run such complex programs. They lacked the administrative skills and experience needed to coordinate across and within sectors, and they lacked the financial resources to fund the programs adequately. Donor agencies attempting to assist these programs were often subject to some of these same problems, with the result that recently, these large integrated programs have been the subject of serious reappraisal.

The Regional Analysis and Market Town Approach

One effort to improve on these large, complex projects was undertaken by USAID's Technical Assistance Bureau (now the Bureau for Science and Technology) in cooperation with USAID field missions in the Philippines, Upper Volta, Cameroon, Bolivia and Guatemala. The project, called Urban Functions in Rural Development (UFRD), is based on the understanding that links between villages, rural service centers, market towns and more urbanized regional centers are

important for promoting rural and agricultural development. These centers provide marketing outlets and service sources for farmers and they provide non-agricultural job opportunities for surplus rural labor and upwardly mobile rural youth. The regional settlement system, which is made up of these centers and their surrounding rural regions, is important also in technology transfer and diffusion. It acts as a channel for disseminating technical innovations and information from cities to rural regions. When this settlement system is functioning well, it provides information flow, an efficient hierarchy of services, and economic opportunities that can increase the productivity and income of rural households and communities.

The UFRD project was started because rural projects generally were taking into consideration regional settlement systems. Comprised of complex aggregations of sectoral activities, projects lacked the spatial or locational orientation that would help identify specific gaps or weaknesses in the regional settlement system and its attendant rural infrastructure. Without a well-developed regional system of cities, towns, and smaller centers to form an integrated marketing and distribution system, the rural farmer who is not within commuting distance of a major center must depend upon the village or local periodic markets for marketing and other basic services. Yet, since the availability of transportation and other services is very low in most rural areas, a large portion of rural families are excluded from the economic mainstream and often even from the marginal benefits of the national or regional development process.

A state-of-the-art monograph was produced as the first step in developing the UFRD Project. It was published by Praeger in July 1978, as Urbanization and rural development: A spatial policy for equitable growth by

Dennis Rondinelli and Kenneth Ruddle. The study concludes with an operational strategy for integrated urban and rural development in which the starting point is an assessment of the gaps, weaknesses, and deficient linkages in a given regional settlement system and its surrounding rural areas. It also sets out some important basic definitions which are important for understanding the project.

The first of these is the term settlement hierarchy -- the system of large villages, towns, and cities in a region that provide a network of services to it. At the bottom of the hierarchy, and normally in closest proximity to the farms and villages in any given region, are the service centers. These small centers tend to be dispersed relatively evenly. Following the general pattern of regional population density, they offer the most fundamental types of services not available on the farms or in the villages. These services will include at least some combination of periodic markets, storage facilities, some permanent vending stalls, perhaps some basic agricultural processing facilities such as mills and presses, a primary school, a dispensary, and the lowest level of central or regional government representation. Service centers are accessible through one or more farm-to-market roads or trails and normally will have some kind of road link with the next higher order center which is the market town.

Market towns are more complex than service centers. They offer a wider range of services and employment opportunities to a more extensive area that may include as many as six or more service centers. In addition to permanent markets or large and frequent periodic markets, the market town might include small manufacturing and processing plants, farm supply and servicing centers, banks and agricultural credit services, blacksmiths, clinics, secondary and vocational schools, sub-regional government services or installations and basic

recreational facilities such as bars, cafes, and sport fields. Market towns usually will have a decent road connection with the highest order of centers at the regional level, the regional centers.

There may be only one or as many as several regional centers in a region, depending on a number of factors such as its size and population, the complexity of its economy and geography, and its level of development. Regional centers tend to be major sources of employment, offering large, complex markets, speciality stores, and specialization in a whole range of productive, commercial and professional services. Hospitals and higher education facilities normally are found in regional centers, and there can be a variety of cultural and entertainment services. The seat of regional government and regional offices of the central government are located at this level. Regional centers can be linked with international markets and communications networks, and usually are linked also to the capital and other major cities by good roads or rail and air service.

This description of centers at different levels of the regional settlement hierarchy and the services they generally provide is intended to represent a kind of normative model; it is not a complete catalogue of services. Obviously the actual combination and nature of services will depend upon the relative size of the center, its age and location, the nature of the local agricultural economy, the local natural and industrial resource base, and other related factors.

The term urban functions in rural development used in this project also merits explanation. The most basic of urban functions is the urban center per se. Its location with respect to the farm and the farmer's access to it are

important to the success of his operation. Access to the town is important also to other rural workers.

Links connecting towns and between farms and towns are defined as urban functions in this project. These links can be roads, other transport systems, communications links, employment links, and marketing linkages.

Finally, all urban-based rural services are considered to be urban functions in rural development. These include the agricultural and rural development services available at the different levels of the settlement hierarchy already described.

These definitions provide a background to the basic regional analysis and market town approach as it was applied and developed in the Philippines and Bolivia -- the two most complete and successful field applications. The Bicol demonstration came first and produced valuable lessons that then were applied to the recently completed Bolivia demonstration.

Urban Functions in the Bicol River Basin

The Bicol River Basin is one of seven major river basins in the Philippines around which the Philippine government is building a regional development program. Located in southern Luzon, it encompasses two provinces totalling 706,000 hectares and has a settlement system of about 120 service centers, market towns and regional centers. The Bicol Basin was selected for the first or demonstration regional development program in the Philippines because, while it holds considerable promise as an agricultural region and its people are noted for their industriousness, its population of more than two million has one of the lowest average per capita incomes in the country. The region sustains an annual battering by typhoons and floods, and its people wage a

constant struggle to overcome the effects of the tidal backwash which often accompanies typhoon flooding and leaves thousands of acres of farmland salinated.

The Bicol River Basin Development Program (BRBDP) was started in the early 1970s to alter the fortunes of this economically depressed region. Of necessity, the program contained a heavy flood control and irrigation component and was most comprehensive in its other aspects as well. It was a multi-faceted program intended to deal with all of the significant elements of agricultural and rural development from agricultural credit, cooperatives and extension services to marketing and transportation. The program was supported by AID.

A major deficiency in the program was its lack of a spatial orientation. It lacked a strategy for dealing with the role of urban centers and their connecting linkages in the physical organization and economic integration of the region. This became apparent during discussions between those responsible for the USAID's Bicol program and the UFRD project manager during a visit in 1975. The UFRD state-of-the-art monograph became the guidelines for the first field application of the "urban functions in rural development" concept, started in the Bicol in 1975.

A multidisciplinary Philippine project team was assembled, headed by an urban and regional planner. The team, to be visited quarterly by a U.S. consultant, was set up as a staff within the BRBDP and had formal consultative contracts with the University of the Philippines at Los Banos and the Center for Policy and Development Studies at Naga in the Bicol River Basin. Two advisory committees also were established locally in an effort to achieve coordination and input on the part of regional offices of central government bodies and local and regional government authorities.

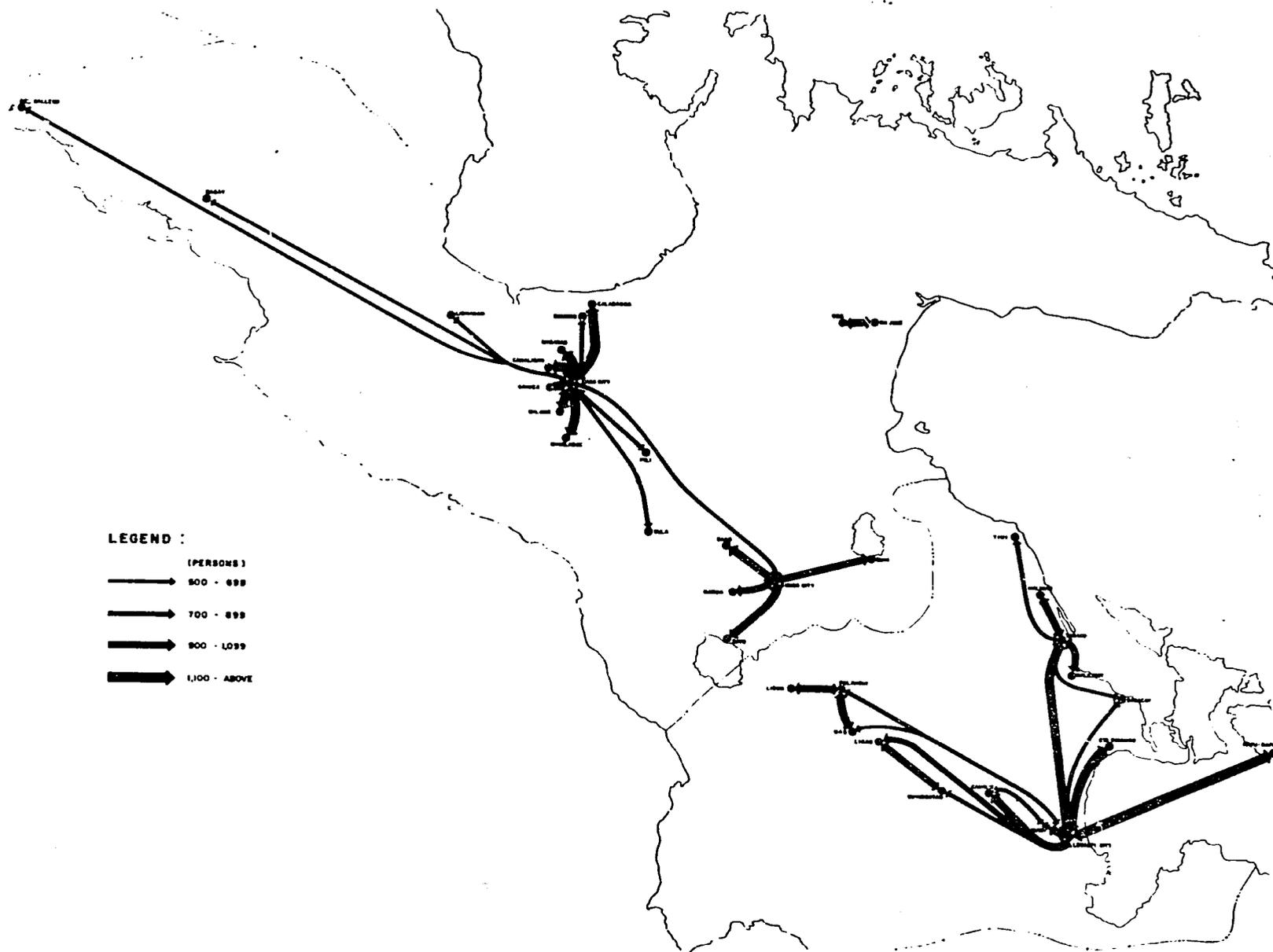
Because it was the first field application, the selection and use of analytical methodologies in the Bicol project were characterized by trial and error. The methods finally adopted were incorporated also in the Bolivia case, to be described in the next section. However, the findings, which contain some surprises, have significant implications for this and other river basin development schemes. They were:

- a. The Basin is not a cohesive economic region as assumed, but rather a collection of six micro regions with little or no economic interaction;
- b. Transport links between centers and their hinterland regions are woefully deficient; and
- c. There is serious paucity of markets and market towns within the hierarchy, leaving all but a narrow axial strip connecting the major centers at opposite ends of the region practically unserved, even though some of these areas are densely settled and farmed (Figure 1).

These findings led the project team to the following principal recommendations. In the team's opinion, the project must:

- a. Develop a more complete transport net focusing particularly on the grave deficiencies in the farm to market road system;

Figure 1 Travel patterns in the Bicol River Basin (number of persons making trips)



- b. Foster development of the many incipient, poorly endowed centers pinpointed through the analysis outside of the more prosperous axial strip in the Basin; and
- c. Develop a minimum package of investments to bring these centers up to some minimal standard.

The UFRD final report came out after much of the Bicol regional development program was underway, so its influence was not as great as it might have been. It did influence the nature and location of private investments in the basin area, as it indicated clearly where potentially good markets were not being served. More importantly, it has been adopted by Philippine government as a basic analytical methodology for its nationwide river basin development program. The UFRD approach has made its way into university curriculum there and the United Nations University has published the Bicol UFRD case in its Resource Systems Theory and Methodology Series.¹

The lessons from the Bicol have influenced other projects. The analysis was too data intensive and the Bolivia application, for example, has been much more selective in this respect. Also, the Bicol analysis did not get down to identification of specific projects -- a design flaw which has been corrected in other applications. Finally even though the Bicol project did provide for participation of local and other government authorities, it did not have input from farmers and rural entrepreneurs who are the intended beneficiaries of such

¹ Dennis Rondinelli, Spatial analysis for regional development: A case study in the Bicol River Basin of the Philippines. United Nations University, Resource Systems Theory and Methodology Series, No. 2, 1980. (NRTS-9/UNUP-166)

a project. The involvement of the local rural or target population becomes especially important when the program calls for identification of specific projects.

The Bolivia Project

Through its application and evolution in Bolivia, the UFRD approach became an even more useful tool for regional and spatial analysis. Countries continue to plan and manage development programs at the regional level and the trend seems to be increasing. However, future region-based programs are likely to be less complex and in some cases may concentrate on one or two key sectors in a few strategic locations within a region. The Bolivia application demonstrated the capacity for selectivity and priority setting within a regional context.

The initial site for the Bolivia project is the Department of Potosi, a large, mostly highland region in the southwest of Bolivia with a population of about 660,000. Much of the land area in the department is high up in the southern altiplano region of the Andes between 12,000 and 14,000 feet in altitude or in the high Andean valleys. Potosi is a poor region with low per capita income and a poor agricultural base. It was mining, not agriculture, that originally attracted large numbers to the area. Several hundred years ago Potosi, which is the capital city of the department and today has a population of about 80,000, was the silver capital of the world and was the largest city in the western hemisphere.

The Potosi UFRD project was part of a larger USAID-sponsored Rural Development Planning Project which extended to six departments. The Potosi activity was an experiment in which analysis of the settlement system and its rural linkages and functions were to provide the framework for the rural development

planning process. The final product was not to be a plan, per se, but a planning process which would yield a regional development strategy, pinpoint priority geographic areas for investment, and identify specific priority investment packages to stimulate agriculture and rural development. This was to replace a regional planning approach which consisted mainly of developing regional operational plans (project lists) with a heavy emphasis on public service infrastructure and transportation projects selected on a piecemeal basis. The plans lacked any explicit development policy or strategy and the spatial distribution of spending predominantly benefited the capital city, Potosi, and major mining towns. The Bolivian government hoped to improve its regional and rural planning and development and the Department of Potosi welcomed the pioneering role it was to have in demonstrating the UFRD approach.

The project was hosted by CORDEPO (Potosi Development Corporation), the agency charged with planning and implementing development in the region. A ten-person team was set up to carry out the project, which included four full-time members from CORDEPO's Planning Department, four temporary assistants recruited from the University of Tomas Frias in Potosi, a part-time draftsman, and the Deputy Planning Director of CORDEPO. A full time advisor, Hugh Evans, was present in Potosi for the two-year project, and was assisted periodically by foreign consultants, including Dennis Rondinelli, the author of the original UFRD state-of-the-art paper and the senior advisor to the Bicol project. The project had the full and active support of CORDEPO leadership, including Alfredo Belliott, who was responsible for producing Potosi's first Five Year Development Plan and who delayed its completion in order to incorporate the UFRD approach, findings and recommendations.

The UFRD analysis in Potosi was carried out in ten steps, according to the original project design. However, in his two-volume final report on the project, Hugh Evans recommends a shortened and less complex approach which is summarized here.²

- a. Inventory of data needs and design of field surveys. This step includes an inventory of data required for subsequent analyses, the design of field surveys needed to produce missing data, and the selection of data processing methods. Examples of places to be surveyed are urban centers, marketplaces and key agricultural supply or processing facilities.
- b. Basic regional resource analysis. This is an overview of economic, demographic, social and natural resource characteristics of the region, focusing especially on agriculture.
- c. Analysis of Regional Settlements Systems. Here, there is a highlighting of the distribution of functions and services in the settlement system and an identification of various levels in the system -- villages, service centers, market towns and regional centers. The basic tool in this analysis is a scalogram, a simplified example of which is shown in Figure 2.³ The scalogram analysis is supplemented by threshold and centrality analyses.

²Evans, Hugh, Urban functions in rural development: The case of Potosi Region in Bolivia, Part I: Concepts, Methods and Application; Part II: Preliminary Evaluation. A report produced for the Regional and Rural Development Division, Office of Multisectoral Development, Bureau for Science and Technology, AID., Washington, D.C. September/October, 1982.

³ Reproduced in Richard Rhoda, Urban and regional analysis for development planning, Westview Press. Boulder, CO, 1982.

- d. Analysis of linkages and study of accessibility. This includes a description of access linkages between settlements and their rural hinterlands, farmers' access to urban based services and functions, and effective service area coverage of major facilities and urban centers. A micro computer-based access model was developed for this analysis in Potosi.
- e. Indentification of spatial constraints and opportunities for development. This is a deliniation of poorly served or isolated areas and an identification of gaps in linkages and functions. The access model developed above also can be used in this step.
- f. Elaboration of strategy for regional development. An elaboration of strategy concentrating on functional economic areas (locations) and segments of the settlement system that serve these areas is covered in this step. It also includes the identification of strategic areas and sectors for investment -- those areas and sectors most important to achievement of regional rural development goals.
- g. Design and evaluation of project packages. Here the project designs packages for strategic areas and sectors, based on their productive potential, including an evaluation and ranking according to agreed criteria, distribution targets, costs, and budget and resource constraints.
- h. Preparation of investment plans, including programs to stimulate private enterprise development. Plans should achieve compatability between spatial, sectoral and regional objectives, policies and projects.

These steps are accompanied and followed-up by a continuous process that includes analyses of institutions, collaboration, coordination and participation, monitoring, and evaluation and institutional development. The process includes also development of software programs and training in their use.

The UFRD analysis was instrumental in identifying the economic and functional sub-regions and smaller rural areas into which the Department of Potosi naturally divides. These sub-divisions were identified principally through linkage analyses and are town centered. For example, the four subregions have at their core a market town and were delineated by the area served by business services such as banks, legal services, wholesale marketing, and import-export establishments, and retail outlets for infrequently purchased products like appliances and furniture. The delineated areas also included some government services such as the Bolivian Institute for Agriculture Technology, the National Highway Service and the National Social Security Service. Coverage also included radio stations, farm supply, hospitals and daily markets.

Within these sub-regions, specific rural areas were delineated, centered on important service centers. These became the basis for strategic targeting of development investment. In the new development plan, four of these areas have been selected for special investment programs, two having attracted the interest of external international funding agencies.

Specific conclusions and recommendations of the analysis that have led to policy changes and directions were incorporated into the Potosi Development plan. These are:

- a. Agriculture was made the cornerstone of CORDEPO's new development plan. The mining sector has overshadowed agriculture in terms of

investments and progress, yet it is of far greater benefit to the national than to the regional economy. It is managed by and directly benefits the national government. Regional investments also have focused on the mining sector, providing basic traditional infrastructure to mining towns and cities. Agriculture was found to be in a general state of decline.

- b. The plan encourages concentration of the rural population in small and medium-sized settlements. Incomes and access to services such as health and education were found to be much better in even the small towns than in rural areas -- especially with respect to the more remote areas.
- c. Specific strategic towns and their deficiencies have been identified and investment programs are ready for funding. In response to the preference given to mining over agriculture, farming towns and the area they serve have been in a state of decline. Many important service centers lack the basic rural service infrastructure needed to effectively serve and foster agricultural productivity and diversification. Deficiencies include lack of irrigation and storage facilities, farm supply stores, fertilizer, tool and farm equipment outlets, and mills and other agriculture processing enterprises.
- d. Farm to market roads are emphasized in the new plan. A critical deficiency in all areas except the area contiguous with the major transport artery in the region is the shortage of farm to market or feeder roads. These connect rural communities with service centers and market towns and enlarge their market areas. These roads are needed to

stimulate commerce and enterprise in these towns and create new employment opportunities.

The UFRD project had a major impact on the planning process and development policy in Potosi. It became the foundation of the new Potosi development plan, which, for the first time, contains an explicit statement of CORDEPO's development policies.

The plan expresses a definite shift from the traditional public works for urban infrastructure to productive activities focusing on agriculture and small agro processing enterprises such as mills, canning factories and other food processing plants. Also, for the first time, the CORDEPO plan shifts from a purely sectoral perspective to incorporate the spatial, locational, dimensions of the regional economy as well. Funds are allocated strategically by sectors and by geographic areas.

The experimental UFRD project in Potosi recently was judged the most successful and promising of the Rural Development Planning project analytical approaches in an evaluation carried out by AID's Latin America and Caribbean Bureau. It is regarded highly by the Bolivian Ministry of Planning, and its adoption in other Bolivian departments has been advocated. More recently, the final report volumes on the project were taken to China by an IBRD consultant to be used in an IBRD and UN sponsored regional development course. He reported back:

We're making considerable use of the Potosi report here in China. In fact, it led to a restructuring of the course along lines that lead to a spatial, social, economic, institutional, and process model of regional development

planning that is appropriate to China, and potentially to other regions as well.⁴

Through its Cooperative Agreement with Clark University and the Institute for Development Anthropology, AID is evaluating all of the UFRD demonstration projects. The evaluation will include also some programs that were just influenced or inspired by the UFRD approach but were not directly part of the UFRD project. The results of this evaluation will produce a detailed UFRD handbook and an in-depth assessment that will cover the virtues and limitations of the approach, its problems and conditions in which it should and should not be applied.

Meanwhile, UFRD has made a significant impact on the literature of rural and regional development and on the design of rural development programs in the field. Graduate courses have been organized around the concept in leading U.S. and developing country universities. Several books have been published reporting on the UFRD approach and others are in progress. Many articles have been spawned and graduate student dissertations have been influenced by it. In December 1981 an International Symposium on Small Towns in National Development was held in Bangkok, sponsored by the Asia Institute of Technology and organized largely around the UFRD concept. It featured a panel of AID's contributions and experience in this field and a keynote address by Dennis Rondinelli, who was responsible for much of AID's pioneering work on UFRD. Further, the UFRD methodology has given the Agency a solid basis for strengthening its regional-based rural development projects through regional analysis. This advance is reflected in AID's draft Rural Development Strategy, presently being reviewed internally in AID.

⁴ Communication from Avrom BenDavid-Val dated November 1982.

Influenced by its UFRD research and experience, AID's Science and Technology Bureau is beginning to examine more intensively the larger market towns and regional centers in light of the role they play in fostering regional economic opportunities. This includes their role in creating non-farm employment opportunities, fostering private sector entrepreneurial activities, stimulating regional agricultural and rural development and providing alternatives to the major cities for rural to urban immigrants.