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BALUCHISTAN AREA DEVELOPMENT PROJECT

FINAL REPORT

December 1991



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The Baluchistan Area Development Project (BALAD)

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BALUCHISTAN AREA DEVELOPMENT PROJECT: FINAL REPORT

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PREFACE

This Final Report summarizes and analyzes the activities of the Louis Berger International, Inc. Technical Assistance Team for the Balochistan Area Development Project (BALAD) over the six years of implementation in the Makran. We appreciate having had the opportunity to assist BALAD's sponsors: the United States Agency for International Development and the Government of Balochistan.

This report was prepared by the Chief of Party, T. Dwight Bunce, and the Project Agronomist Daniel M. Bradbury, with valuable assistance from Senior Water Engineer Mohammad Yahya Khan, Senior Road Engineer Safdar Hussain, Head Construction Engineer Mohammad Ali Baloch, Sociologist Abdul Rashid Baloch, and Heavy Equipment Specialist Mohammad Saleem. The report also reflects past contributions to BALAD by former members of the TA Team, Pakistani and American.

The first of the report's five chapters discusses the History of BALAD, breaking it into three implementation phases. The second chapter summarizes BALAD accomplishments in both the technical and institutional components.

The third and longest chapter first assesses BALAD's activities in its principle sectors of Roads, Water, Agriculture, Special Development Activities (SDA), and Planning. These assessments consist of analyses, lessons learned, and development opportunities. The chapter concludes with analyses and lessons learned in the categories of Management of Construction, Training, Project Design, Management, Community Participation, and Private Sector Development.

In Chapter 4, the lessons learned from Chapter 3 are summarized and grouped from a thematic perspective. An overall assessment of BALAD's sustainability is given at the end of Chapter 4. Development opportunities are summarized in Chapter 5.

EXECUTIVE SUMMARY

Louis Berger International Inc. provided Technical Assistance to the United States Agency for International Development and the Government of Balochistan in the implementation of the Balochistan Area Development (BALAD) Project for six years (1986 - 1991).

This Executive Summary first gives an overview of Project History and Accomplishments. Highlights of lessons learned are then presented in the areas of Infrastructure Development, Institutional Change, Community Participation, Private Sector Development, Project Management, and Project Design. The concluding section assesses the sustainability of BALAD.

PROJECT HISTORY

The implementation of BALAD can be divided into three phases, roughly corresponding to the original contract period and two subsequent extensions, as follows:

1. The first phase covered the period from contractor mobilization, January 1986, through 1989 when USAID prepared to terminate the Project. Activities during this phase consisted primarily of completing a great number of physical works that were useful and highly visible.
2. The second phase (mid-1989 through September 1990) was a period of transition. The Project was extended, and agricultural and planning activities were added.
3. The third phase of the Project (October 1990 through the termination of the Technical Assistance Contract in December 1991) was to have been the Integrated Rural Development capstone of the Project. However, the high expectations for this phase were not realized, as BALAD underwent major changes and reductions in 1991 when USAID responded to the Pressler Amendment.

ACCOMPLISHMENTS

Of the \$ 33.5 million obligated for BALAD, the lion's share has been spent on infrastructure, including the rehabilitation and maintenance of over 1,500 kilometers of roads, and the construction of the Ketch River Bridge, 52 primary schools, and 185 irrigation water projects. At a much lower cost to BALAD, the Project implemented its agricultural, planning, and institutional support activities.

Because of the initial need to establish BALAD's credibility at a time when rocks were being thrown at Project vehicles, BALAD concentrated on visible construction projects in the early years.

The physical accomplishments as of December 1991 are summarized below:

SECTOR	COMPLETED
ROADS	
Road Maintenance	1,575 km.
Road Rehabilitation	399 km.
Drainage Structures	59
Town Road Paving	5
WATER	
Water Course Improvements	44
Dams	17
Karez Improvements	23
Karez Mother Well Drilling	95
SPECIAL DEVELOPMENT ACTIVITIES (SDAs)	
Schools	52
Maternity Health Center	1
AGRICULTURE	
On Farm Demonstrations	154
Farmer Training	594 days
Agriculture Dept. Staff Training	125 days

In the last two years (1990-1991), more emphasis was placed on non-infrastructure items, especially planning and its institutionalization.

The Project has successfully delivered an impressive quantity and quality of outputs in a remote desert region. In the process, the attitude of Makranis toward American-assisted development has become more positive.

LESSONS LEARNED

INFRASTRUCTURE DEVELOPMENT

For technically sound and cost effective development of infrastructure, planning is essential. Planning for the roads and water sectors should be in the context of comprehensive regional plans. The framework of the Regional Plan for Coastal Makran helped establish the water and road development interventions most critical for regional growth and for meeting pressing human needs.

Effective management of scarce water resources needs to be based on a continuing analysis, for each water basin in the Makran, of existing groundwater, annual withdrawals, and natural and artificial replenishment.

Many modern road planning and engineering techniques can be usefully adapted and applied in the Makran. The Force Account arrangement with C&W permitted BALAD to contract rapidly for road work when fixed quantities could not readily be estimated. The TA Team provided construction supervision and often technical direction, resulting in higher quality work than would otherwise have been the case. It was also advantageous for USAID to maintain significant financial oversight with the assistance of LBII.

INSTITUTIONAL CHANGE

For the Makran to be developed, more effective public institutions are necessary. Regional planning and related public and private sector investment promotion are needed in the Makran, but there is no institution mandated and equipped to pursue them.

In spite of BALAD's provision of substantial technical assistance, training, and equipment over the years, there was little improvement in the performance of the Communication & Works Department, Agricultural Extension, and the PPMU. Reform would require some combination of political will, high level administrative commitment, higher pay for employees, and better qualified technical personnel.

Within the current GOB planning system, including the PPMU, information flows tend to be top-down, with little dialogue on development priorities. Effective regional planning requires two-way dialogue as well as better sharing of information. The institutionalization of regional planning requires policy commitment, leadership and improved government decision-making linkages.

Training of Agricultural Extension and On-Farm Water Management staff at the local level can increase certain skills, but major changes in the system of Agricultural Extension are needed. The Project proved that low-cost agricultural development can be achieved through a program focused on farm based demonstrations. Farmer training can be carried out inexpensively if the motivation to plan and conduct the training is present.

COMMUNITY PARTICIPATION

On farm demonstrations conducted by BALAD incorporated significant beneficiary contributions. The demonstrations are promising avenues for future agricultural development in the Makran. Participation by the recipients in both project selection and implementation increases the quality of construction and the subsequent operation and maintenance of projects.

In the Makran, the effectiveness of popular participation in planning through the local council system is limited by low literacy and lack of understanding of the local planning and development process.

PRIVATE SECTOR DEVELOPMENT

Progress was made in upgrading the capabilities of private contractors. Local contractors remained fairly small, but some of the contractors who started off with BALAD are now bidding for bigger contracts with other agencies. Strict construction supervision contributed greatly to the improved quality of construction work of private contractors.

There are selected private sector opportunities in the Makran, such as in date marketing, but the constraints are serious. For many of the possibilities, further study is indicated before deciding whether major investments are warranted.

The Balochistan Chamber of Commerce and Industries has the potential to take on a much more important development role in the province.

PROJECT MANAGEMENT

The TA Team was tested severely in 1991 by cutbacks in BALAD's scope and the series of changes the Project underwent. In 1991, BALAD was altered a number of times; a climate of uncertainty prevailed. The key lesson re-learned for many of BALAD's participants was the importance of maintaining one's equilibrium and a sense of humor.

The participation of highly qualified and, often even more important, highly motivated and dedicated local counterparts can increase the effectiveness of Expatriate Technical Assistance by orders of magnitude.

PROJECT DESIGN

Agreement on objectives contributes to sustainability. Increased dialogue between USAID and GOB could have narrowed differences, and thus contributed to tighter Project designs and better implementation.

A clear Project design, including its institutional aspects, facilitates efficient and smooth project management.

BALAD should have gone through periodic formal redesign processes involving the GOB, USAID, the TA Team, and other interested parties. Key decision-makers should have interacted and sought common ground, especially concerning BALAD's purposes.

A project like BALAD should change in response to circumstances, lessons learned along the way, and altered priorities of the sponsoring governments. BALAD did indeed change, but during the year-and-a-half Transition Phase and the last 11 months of the Project, objectives were not clearly specified or integrated.

SUSTAINABILITY

The decision to emphasize short-term visible outputs in the initial infrastructure phase of BALAD meant that institutional development was given lesser importance. The December 1990 Work Plan integrated physical outputs with institutional ones, including training; that design stressed sustainability. However, because of the Pressler Amendment and the curtailment of BALAD, the December 1990 Work Plan was radically cut back. This jeopardized the sustainability of major objectives.

On the other hand, various elements of BALAD have strong prospects for yielding continuing benefits, such as:

- The shingle roads rehabilitated by BALAD will provide better service than the previous tracks, even with poor C&W maintenance.
- The dams built to recharge aquifers should last for many years with little or no maintenance.
- The karez and korjo improvements, by and large, should be maintained by their private owners.
- The use of improved practices by farmers should continue.
- Trained BALAD and GOB staff potentially could apply their skills in various ways to improve the Makran or other parts of Pakistan.

The development opportunities which conclude this report are well-crafted building blocks for any organization concerned with the overall development of the Makran.

On balance, the impacts of the Pressler Amendment dealt sustainability a hard blow. Nevertheless, many BALAD outputs will continue to provide benefits. An impressive number of solidly-based development opportunities are being left as a legacy.

CHAPTER I

PROJECT HISTORY

A. BACKGROUND: 1981 - 1985

In 1981, the United States Government and the Government of Pakistan entered into a \$3.2 billion agreement for provision of economic and military assistance for the period FY 1982 - FY 1987. The economic assistance program was to promote long term development and address the country's foreign exchange needs through quick-disbursing activities that lay the foundation for economic growth and stability.

The Balochistan Area Development Project (BALAD) became a part of that package. Balochistan borders then Soviet-occupied Afghanistan and revolutionary Iran, and the Makran coast covers 400 km along the Arabian Sea. Part of the rationale for USAID assistance in Balochistan was that regional stability and development were essential given the geopolitical situation at the time.

The following paragraphs of project history are taken from the Interim Evaluation of the BALAD Project conducted in 1990. These paragraphs are not necessarily presented in order.

"The [BALAD] Project was chiefly motivated by the need to integrate southwestern Balochistan more closely into the administrative and economic fabric of Pakistan. Secessionist sentiments and ethnic ties with Baluch populations of Iran and Afghanistan were a source of apprehension to the Government of Pakistan (GOP), especially at the height of the war in Afghanistan. The Makran, isolated from the rest of the country and facing the sea, Iran and the Gulf, was in a sensitive strategic position.

"Building up its program at the time, USAID agreed to provide critical infrastructure and thus help GOP demonstrate its concern for the needs of the neglected population. Administered by a Regional Affairs Officer in Karachi, BALAD was treated as quite separate from the Mission's regular development program. USAID officials in Islamabad readily admit that BALAD would not have been part of the AID program if normal development criteria had applied.

"The Project Agreement was signed on August 30, 1984. USAID funding for the proposed five-year effort was placed at \$40 million with an additional imputed value contribution from the Government of Baluchistan (GOB) estimated at approximately \$5.8 million in rupee equivalent. The Project Paper (PP) identified three main

areas of activity: (1) road construction, rehabilitation and maintenance; (2) improving the efficiency of existing water facilities and the construction of small and medium-scale diversion structures and dams; and (3) strengthening the capacity of the GOB and the Makran division to plan, prioritize, select and implement development projects. Subsequently, the life of the project was extended by one year to December 31, 1990. AID funding was also increased in August 1987 to \$45 million, primarily to finance additional road design activities.

"Conditions precedent in the original grant agreement included the formal establishment of a Project Planning and Monitoring Unit (PPMU) at Turbat, appointment of a project director, and provision of a site for the project headquarters."

In December 1985, construction of the BALAD office and residential compound in Turbat began. The compound, designed to serve as Project Headquarters and provide housing for the expatriate and Pakistani technical assistance team, was completed in April 1987.

B. MOBILIZATION AND IMPLEMENTATION: 1986

Two expatriate PSC engineers worked in Turbat in early 1985, beginning pre-implementation work in the road and water sectors.

USAID signed a contract for Technical Assistance (TA) with Louis Berger International Inc. (LBII) in September 1985. The core, long-term expatriate TA Team was to consist of five members: a Chief of Party (COP), Senior Civil Engineer (Roads), Senior Civil Engineer (Water Manager), Irrigation Agronomist and Regional Planner/Economist. The COP was to be assigned for 38 person-months, the Road and Water Engineers for 36 person-months each, and the Agronomist and Regional Planner/Economist for 24 person-months each. All team members were to be stationed in Turbat except the Planner/Economist who was assigned to work with the GOB in Quetta. Four members of the TA team were to be mobilized immediately; the timing for mobilization of the Agronomist was to be determined after the start of project implementation.

The first of the LBII TA Team (the Chief of Party and the Regional Planner) arrived in early January 1986, followed by the Water Engineer in February of the same year. The TA Team was fully mobilized in April 1986 with the arrival of the Road Engineer.

¹ Development Alternatives, Inc., Interim Evaluation of the BALAD Project, 1990.

During construction of the compound, the TA Team and Project offices were located at the Nawab's Palace in Turbat.

Three additional activities of the BALAD Project were implemented that were outside the scope of the LBI contract but affected the contractor's work. These activities were:

Construction of the Kech River Bridge in Turbat,

Construction of 55 kilometers of the road between Bela and Awaran (later expanded to 101 kilometers), as well as design of the Awaran-Turbat road, and

Implementation of a Makran Vocational-Technical Training Program to send 50 Makrani students for two-year (AA) degrees in the U.S. This largely replaced the original training program contained in the Project Paper.

The Project was tied into three other AID programs. Agricultural Commodities and Equipment (ACE) program funds were used to procure essential equipment such as jeeps, generators and heavy machinery for the Communications and Works (C&W) department. Development Support Training Project (DSTP) monies funded half of the vocational-technical training program, and the Project Design and Implementation Fund (PDIF) financed certain activities prior to TA team mobilization.

Subsequent history of the Project can be presented in three phases, roughly corresponding to the original contract period and two subsequent extensions. The first phase covers the time from the contractor mobilization, January 1986, through 1989 when AID prepared to terminate the project. Activities during this phase consisted primarily of completing a great number of physical works that were useful and highly visible. The second phase of the Project (the middle of 1989 through September 1990) was a period of transition when the Project was extended, organizational control was changed and objectives redefined. The third phase (October 1990 through PACD in December 1991) was to be the capstone of the Project. Integrated rural development would be realized and sustainability achieved. This phase, however, did not reach its high expectations due to circumstances largely beyond the control of Islamabad or Turbat. It became, rather, an intense phase out of the Project.

C. PHASE I : INFRASTRUCTURE DEVELOPMENT (January 1986 - March 1988)

The Infrastructure Development Phase was slow in getting started, but by 1987-1988, a considerable number of road and water sector sub-projects were being constructed. The 1990 interim evaluation explained:

"As might be expected under the rugged conditions in Makran, fuel shortages and the breakdown of equipment as well as difficulties with local contractors because of absences, non-performance or inability to meet standards were continuing problems. The need to terminate one subcontractor in 1987 resulted in a court case against LBI. The frequent and sometimes prolonged absences from Turbat of the senior staff of line departments, particularly C&W, also held up implementation. Nevertheless, 1987 and 1988 saw a growing momentum of activity: construction of check dams and watercourse improvements, siphons, karez borings and improvements, road rehabilitation to improve gradients and alignments, upgrading with low water crossings and culverts, and maintenance operations."²

This phase was heavily oriented to infrastructure and saw the completion of numerous projects in three main areas: Water, Roads and Special Development Activities (SDAs). Indicative of this emphasis, an expatriate Construction Engineer was added to the long term TA Team in late June 1988.

The Project progressed to the point where the Chief of Party reported that a majority of the targets set in the Project Paper were achieved, with exception of the institutionalization of PPMU. This institutionalization "was recognized to be unobtainable at an early stage and it was set aside, with the concurrence of all parties, to enable efforts to concentrate on establishing a credible BALAD presence in the Makran."³

This phase of the Project, however, did demonstrate that development in an extremely remote division of the country was feasible in spite of the fact that "achievement to date has been somewhat ad hoc and arbitrary, and it should be viewed as a first stage in a much more substantive development effort."⁴

At the end of 1987, USAID conducted its first interim evaluation of BALAD. Its main conclusions were that:

"The GOB is unable to properly staff the PPMU in Turbat and the lack of GOB counterparts is making institutionalization impossible. ... The fate of the PPMU will be decided by GOB; and that USAID should do little more than wait and see what emerges. In the meantime,

² Development Alternatives, Inc., op. cit., p. 3.

³ David Jones, BALAD Interim Progress Report - COP David Jones Final Report, BALAD Report, March 1989 p .

⁴ Ibid.

the process established which has the LBI TA Team playing a lead role in terms of design and implementation, with the PPMU serving as a liaison and PC-1 processing office, should continue.

"After a shaky start, the LBI TA team seems to have overcome most of its management problems and enjoys a good working relationship with the PPMU and district administration. Their experience, however, has been costly in terms of time."⁵

Its concluding comment was that "The most important intervention is still basic infrastructure such as the Beja-Awaran-Turhat road which is central to any follow-on activity."⁶

At the end of 1988, the Project would have been terminated at the end of the original LBII contract period except for intercession of the Chief Minister of Balochistan with the U.S. Ambassador. Agreements for the GOB to staff PPMU positions resulted in an extension of the Project through September 1990.

Central to the extension was a shift in emphasis from infrastructure construction to agriculture production and rural development planning. This coincided with USAID transferring management from the Office of Engineering to the Agricultural and Rural Development Division (ARD). "This change meant more coordination from Islamabad and refocusing activities to conform more closely to USAID's development strategy. The integration of "lagging areas" of the country into the national economic mainstream remained an overall objective, but with greater emphasis on popular participation, involvement of the private sector and women in development, and on raising human resources and management capacity to a level where all area development projects will be planned and managed by local and provincial authorities."⁷

D. PHASE II : TRANSITION (April 1989 - September 1990)

The LBII contract was extended through September 1990. Particular emphasis was placed on agricultural development and institutional development.

⁵ TVT Associates, Interim Evaluation of the Baluchistan Area Development Project, December 1987.

⁶ Ibid.

⁷ Development Alternatives, Inc., op. cit., p. 3.

The construction of the Bela-Turbat road was split off of the BALAD Project and became the Balochistan Road Project. New school construction activities were dropped from the BALAD list of activities as USAID was implementing a large Primary Education Project (PEP) in Balochistan.

To accomplish the new Project objectives, this Transition Phase began with changes in the Technical Assistance Team. The Water Engineer and Construction Engineer were not replaced when their contracts expired; the Chief of Party was replaced by a water engineer; the Road Engineer, a specialist in construction, was replaced by one with a strong background in road systems management; and the Agronomist position was finally staffed.

This Phase of the Project was characterized by funding delays and a new orientation, as described by the incumbent COP:

"New projects still were under construction but new projects were not possible since there was no money available. In August 1989, money was allotted to P/L-8 to cover committed projects plus a few small water projects just awaiting funding.

"...Adequate money became available in February 1990 to begin [the process of approval for new projects in all sectors].

"This [period] can best be summarized as one covering a transition period between two different types of projects. The earlier, infrastructure construction ... essentially ended in February 1989 although it took six months ... to complete the construction projects. The new project [was] still groping for balance between its planning orientation, social objectives, and [the] necessity for some physical accomplishment."⁸

In mid-1990, USAID decided to extend the Project through December 1991 with an option to continue it an additional nine months through September 1992. This decision was followed up by a second interim evaluation conducted in September 1990. The Evaluation Team concluded that:

"After a very slow start under isolated and difficult conditions, BALAD has established for itself an important place in the Makran. Accomplishments with respect to infrastructure are mixed but generally positive.

⁸ James Schoof, End of Tour Report, July 1990, p. A-1.

"With regard to the institutionalization of BALAD activities, the Project has little to show. Long delays in providing the leadership and staff to the PPMU left the evaluation team with serious reservations regarding GOB's commitment to decentralize development planning and project monitoring. USAID efforts to de-emphasize implementation of infrastructure and get the Project back onto its original track, while understandable, have tended to undermine the momentum of activity and PPMU confidence. BALAD is still today a contractor operation with PPMU tacked on as an adjunct. Except for agricultural activities which have been a joint effort by PPMU and LBI, road and water sector projects were accomplished largely through the efforts of the LBI staff acting independently.

"The evaluation team decided that, despite the institutional and bureaucratic obstacles, it would be a mistake not to press ahead with efforts to establish a viable development planning, monitoring and coordinating mechanism at the Makran divisional level. ... the potential importance of such a mechanism in achieving participatory development planning and administration is well worth the risks involved."⁹

E. PHASE III : INTEGRATED RURAL DEVELOPMENT (September 1990 - December 1991)

In September 1990, the LBI contract was amended to allow continuation of activities through December 1991 with an option to extend it again through September 1992 subject to extension of the BALAD Project Activity Completion Date. Justification for this extension was presented in the contract amendment

"In view of the development needs of a remote and lagging area such as Makran, there is a need to continue TA beyond September 30, 1990. It is unfair to expect a neglected and lagging area to sustain institutional strengthening and other development interventions of the project without having them firmly established. In order for the project interventions to be firmly institutionalized and to ensure their sustainability, the TA assistance ... similar to that being provided under the existing contract is required..."¹⁰

⁹ Development Alternatives, Inc., op. cit., pp. xiii - xiv.

¹⁰ USAID, BALAD Technical Assistance Contract, September 1991, p. C-2.

Once again changes were made in the TA Team. The Chief of Party was replaced by a Chief of Party/Planner, a Water Resources Engineer was added and the Road Engineer was replaced by a specialist in Road Maintenance Management Systems.

The overall Scope of Work for this Phase of the Project related mostly to institutionalization of regionalized planning in the Makran, and to activities which would serve to strengthen planning capabilities in the line agencies working with each of the project's sectors (PPMU, C&W, Irrigation, Public Health Engineering and Agriculture).

The TA Team developed a detailed Work Plan, capitalizing on the work done to date and aimed at reaching the highest level objectives: institutionalization of Project activities within line agencies to insure the sustainability of the work carried out by the Project. This Work Plan was presented to USAID and the GOB at a workshop in Quetta in early January 1991. The Work Plan was approved by USAID in January 1991. Unfortunately, implementation of the Work Plan was adversely affected by two events:

The expatriate consultant team was informed on the same day the work plan was approved that it was to be evacuated from Pakistan. It departed on January 8, 1991 and was not allowed to return until May of that year.

Secondly, while the expatriate team was not in country, imposition of the Pressler Amendment forced the Mission to cut the project back dramatically, reducing the level of effort and funding while informing the contractor it would not exercise the optional nine month extension.

The TA Team made efforts to implement the Work Plan but with only limited success due to the communications problems associated with managing activities from half way around the world. The Expatriate Team carried out useful activities in New Jersey, preparing studies, concept papers and working documents. The Mission, in the meantime, ordered physical work stopped in the field.

In May 1991, half of the Expatriate TA Team was allowed to return to Pakistan, the two engineering positions being terminated. Upon the return of the COP and Agronomist, the TA Team developed a "truncated Work Plan" covering activities to be carried out through the end of the year and presenting a schedule of close-out activity and staff demobilization.

Specific activities carried over from the June 1990 Work Plan included development of an organizational framework for planning in the Makran, an inventory of all karezes and wells in the Division, preparation of traffic counts and a road conditions surveys on all

primary roads of the area, an electro-resistivity survey of Gwadar District, remedial works on roads and water structures, on-farm demonstrations and two agricultural marketing studies.

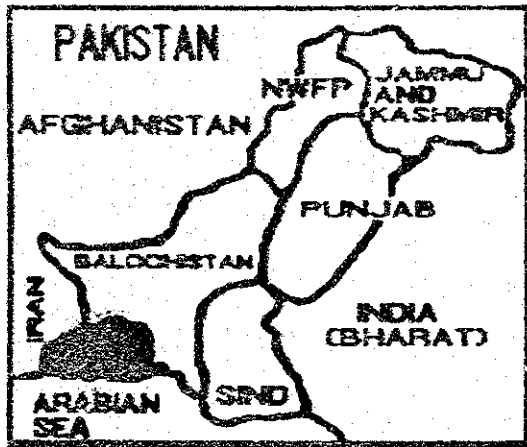
New activities included development of the Regional Plan for Coastal Makran, studies of fisheries and tourism potential along the Makran coast, initiation of two local contribution water development projects, and preparation of Purpose Level Monitoring indicators.

Close out activities included phasing out staff, handing over property to the Government of Balochistan, ensuring project documentation was complete and in order, and preparation of individual and project close-out reports.

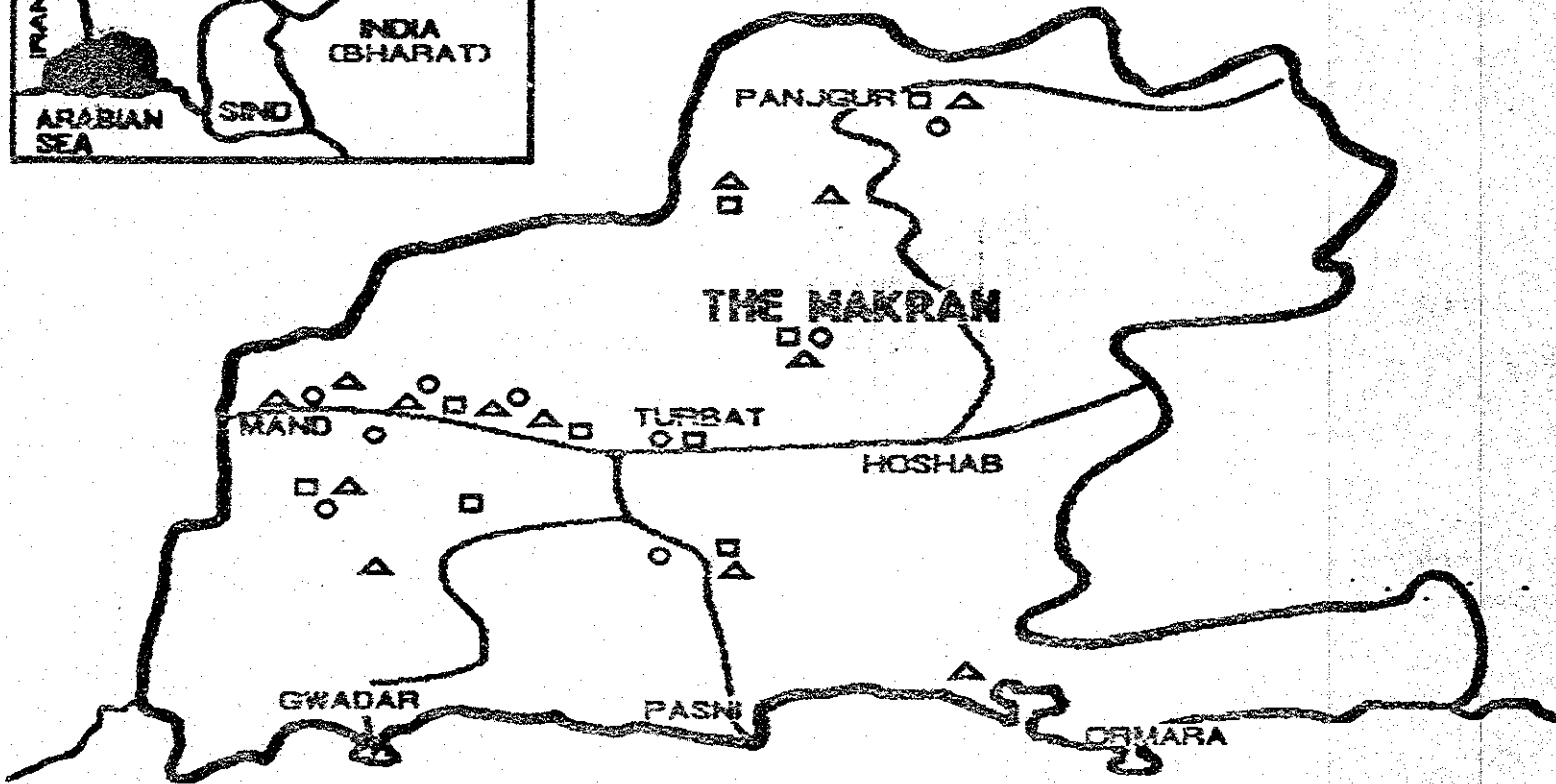
F. SUMMARY

Figure 1 is a map of the Makran Division showing BALAD activities in roads, water, agriculture and Special Development Activities.

FIGURE 1. BALAD ACTIVITIES IN THE MAKRAN



LEGEND	
ROAD IMPROVEMENT	—
IRRIGATION IMPROVEMENT	○
AGRICULTURAL PROJECTS	△
SDA SCHOOL IMPROVEMENT	□



CHAPTER II

PROJECT ACCOMPLISHMENTS

Of the \$ 33.5 million obligated for BALAD, the lion's share has been spent on infrastructure, including the rehabilitation and maintenance of over 1,500 kilometers of road, and the construction of the Kech River Bridge, 52 primary schools, and 185 irrigation water projects. At a much lower cost, the Project implemented its agricultural, planning, and institutional support activities.

Because of the initial need to establish BALAD's credibility, BALAD concentrated in the early years on visible construction projects, shifting the balance back in the last two years (1990 - 1991) toward non-infrastructure items, especially planning and its institutionalization. The Project has successfully delivered an impressive quantity and quality of outputs in a remote desert region. In the process, the attitudes of Makranis toward American-assisted development has become more positive.

Project accomplishments are broken down by the five Project components. For each component, accomplishments are summarized and a table presented showing progress over the life of the Project measured according to purpose and output level indicators. These tables are followed by a graphical representation of major outputs for each component except Planning.

A. ROADS

1) Road Maintenance

During the life of the project, BALAD performed improved road maintenance on 1575 kilometers of Makran roads. The target established in the Project Paper was 900 kilometers.

2) Road Rehabilitation

Stage 1 Rehabilitation (basic improvement) was carried out on 330 kilometers of roadway. Stage 2 Rehabilitation (improvement to a higher standard) was carried out on 69 kilometers of roads.

The target for road rehabilitation presented in the Project Paper was 600 kilometers.

3) Construction of Drainage Structures

The Project constructed 59 drainage structures. These structures consisted of low water crossings, culverts and siphons. The target established in the LBII contract was 30 drainage structures.

4) Road Shingling and Paving

- Shingling: 29 kilometers of roads, including over five kilometers of village roads were shingled.

- Paving: The project paved five stretches of Turbat Town/bazaar roads.

5) Road Construction

The Project constructed and paved the link road connecting the main Turbat Town/Bazaar road with the approach road to the Kech River Bridge.

6) Road Realignment

The Project made major improvements in the alignment of two sections of roads at the Talar Gap. The northern approach was shifted to higher ground, the Talar Gap roadway was widened, and improvements in drainage, and horizontal and vertical alignments were made.

7) Emergency Repairs to the Kech River Bridge

BALAD rapidly mobilized the resources of the Communications and Works Department (C&W) to make emergency repairs to the Kech River Bridge after it sustained flood damage in February 1991. Repairs included channelizing the riverbed to prevent backwash damaging the earthen work of the bridge.

8) Institutional Strengthening of the Communications and Works Department

The Project provided training to 216 C&W workers in machinery operation and maintenance.

The Project procured equipment for the C&W Department valued at over \$2.9 million, including dozers, water trucks, backhoes, mobile shops, dumptrucks, loaders, rollers, trailers, compactors, a crane, workshop tools and surveying and drafting equipment. It also arranged for equipment repairs worth over \$300,000.

Improved methodologies were introduced in C&W through the preparation of the following programs and documents:

- a) Road Classification System¹
- b) Geometric Standards²
- c) Road Rehabilitation Concepts and Methodologies³
- d) Improved Road Rehabilitation Monitoring System
- e) Kilometer Post System
- f) Road Condition Rating System⁴
- g) Traffic Count System⁵
- h) Equipment Preventive Maintenance Program

9) Force Account System of Funding

Through the Project, USAID established a cost effective, flexible and time-saving force account system with the C&W department through PIL-14. This resulted in a steady reimbursement of funds which insured timely progress of road rehabilitation activities.

10) Private Sector Strengthening

The Project increased the skills of private sector contractors by requiring them to perform to higher standards than have been previously required. Eleven contractors benefited from this effort.

Road Reports

T. McKenzie, Road Rehabilitation, Concepts and Methodology, BALAD Report, March 1990

Louis Berger International, Inc., Geometric Standards for Road Works, BALAD Report, May 1990.

¹ Louis Berger International, Inc., Road Classification System, BALAD Report, May 1990.

² Louis Berger International, Inc., Geometric Standards for Road Work, BALAD Report, May 1990.

³ T. McKenzie, Road Rehabilitation, Concepts and Methodology, BALAD Report, March 1990.

⁴ Louis Berger International, Inc., Traffic Counts and Road Condition Survey, BALAD Report, November 1991.

⁵ Ibid.

Louis Berger International, Inc., Road Classification System, BALAD Report, May 1990.

T. McKenzie, Close Out Paper, BALAD Report, June 1990.

Louis Berger International, Inc., Road Sector Work Program, BALAD Report, April 1991.

K. Lande, Close Out Paper, BALAD Report, May 1991.

Louis Berger International, Inc. Traffic Counts and Road Condition Survey, BALAD Report, November 1991.

Figure 2
ROAD PAVING AND STRUCTURES

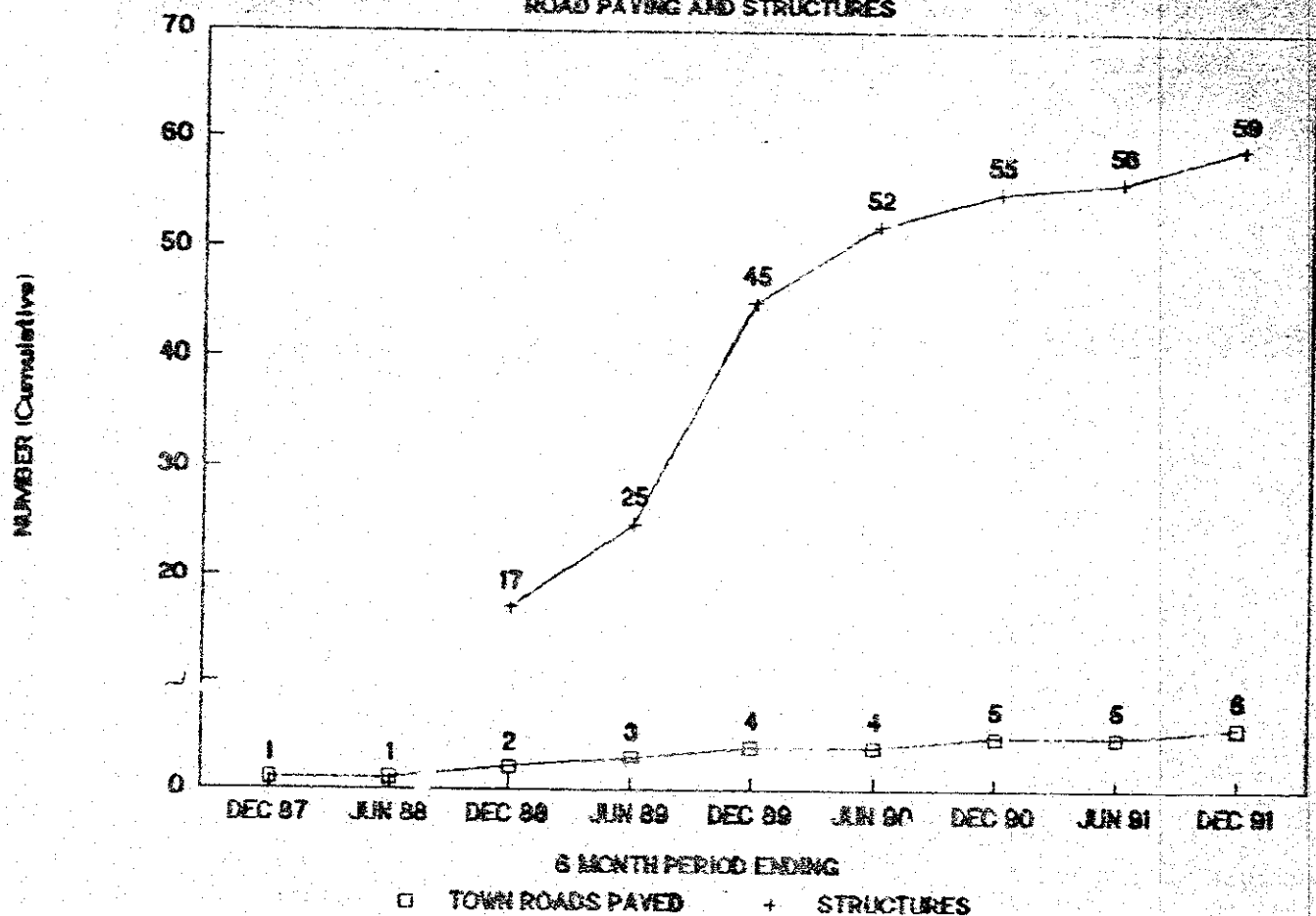
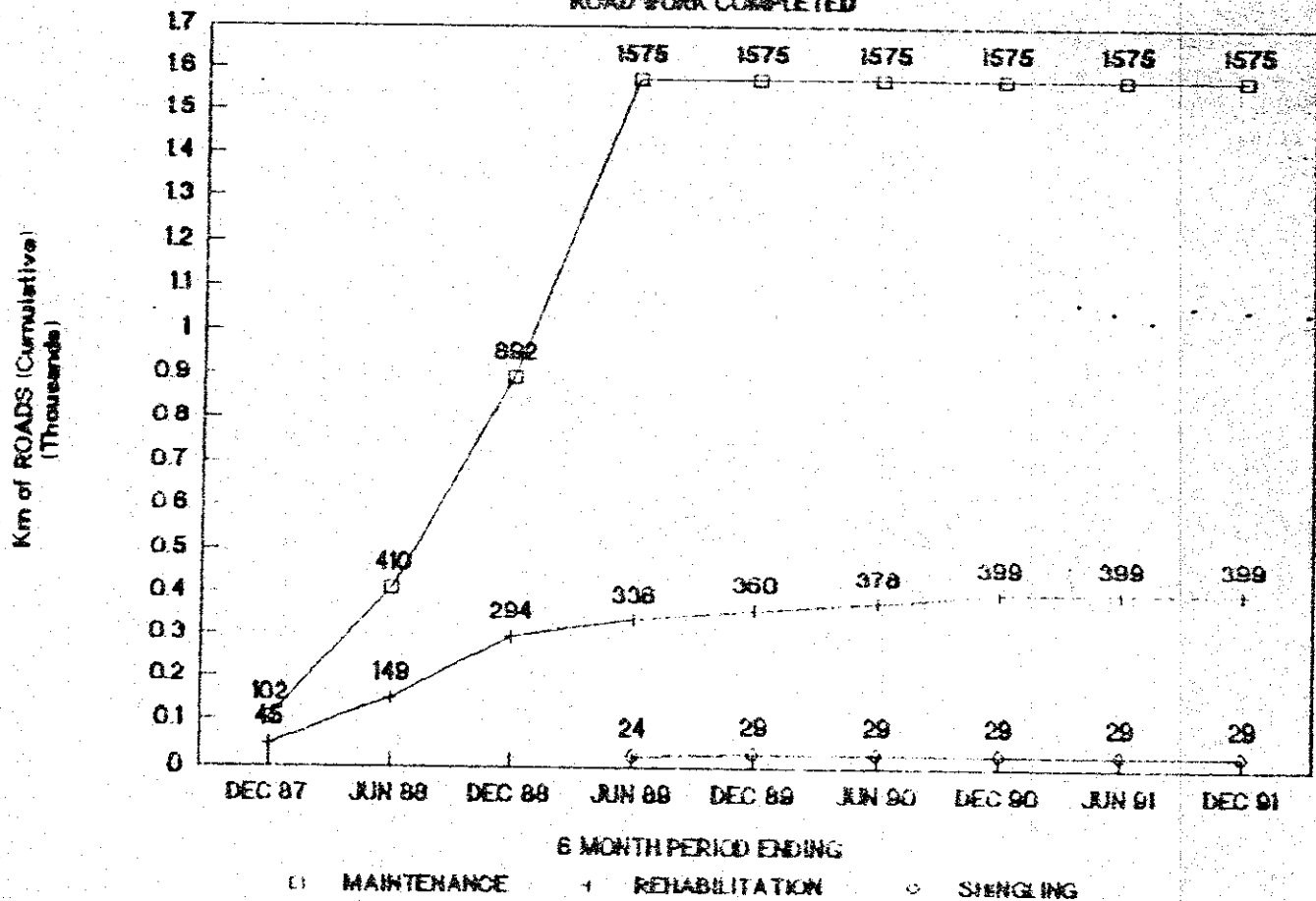


Figure 3.

ROAD WORK COMPLETED



COMPONENTS OF BALAD PURPOSE AND PURPOSE AND OUTPUT INDICATORS	DATA							TARGET	ANALYSIS OF CURRENT TRENDS
	85-86	86-87	87-88	88-89	89-90	90-91	CUM. (TO DATE)		
A ROADS									
PURPOSE LEVEL									
1. Daily traffic volume at key points in the Mekran	535 (1)				991	1,359			The increase in traffic volume was to some extent encouraged by improvements in roads made by BALAD (indicators #4 & #5). The sharp 90-91 increase reflects more smuggling after customs enforcement was reduced.
2. Decrease in one way travel time in hours from Turbat to 5 major Mekrani destinations	22	20	18	16	16	16			The notable reduction in travel time was brought about to a significant degree by the BALAD road improvements (indicators #4 and 5).
3. Performance of C&W in road maintenance and rehabilitation in the Mekran: Rating		1	1	2	2	2			The performance rating of the Communications and Works Department in the Mekran (C & W) improved only from a level of "poor" to one of "fair" in spite of the training and equipment provided by BALAD (indicators #6 and 7). C&W cooperates with BALAD on BALAD- assisted construction projects but its performance appears otherwise not to have improved significantly.
OUTPUT LEVEL									
4. Kilometers of roads rehabilitated: Total			149	187	42	21	399	500	BALAD made major contributions to road rehabilitation in the Mekran, especially in the early years of the project.
a) Stage I: Basic improvement			145	185			330		
b) Stage II: Improvement to higher standard			4	2	42	21	69		
5. Kilometers of roads maintained		102	790	683			1,575	900	BALAD made a major contribution to road maintenance in the Mekran, in the early years of the project.
6. No. of C&W workers trained by BALAD		29	71	43	55	18	216		Over the years BALAD has trained significant numbers of C & W personnel.
7. Units of equipment provided to C&W through BALAD		4	8	13	46		71		BALAD has supplied numerous pieces of equipment to C & W.
B. Drainage Structures			17	28	7	3	55	30	

B. WATER

1) Karez and Korjo Improvements

Twenty-three karezes and korjos were improved through construction of infiltration galleries, installation of pipes in karez tunnels underneath nullahs, extension of karezes, deep channel lining and construction of aqueducts over nullah crossings.

2) Karez Watercourse Improvements

Forty-four watercourses in the Makran were improved by lining channels and installing siphon and pipe aqueducts at nullah crossings.

3) Karez Mother Well Drilling

Drilling of 95 karez mother wells to tap deeper artesian aquifers was carried out by the Project. Borings were done by both hand and mechanical impact boring.

4) Delay Action Dams/Check Dams

The Project constructed 16 delay action dams, introducing improved engineering and construction techniques. The construction techniques included gabion, earthwork and combination gabion/earthwork methods.

5) Floodwater Diversion Dams

A gabion floodwater diversion dam was constructed to divert flood water runoff into a korjo.

6) Floodwater Bunding/Land Leveling

The Project developed an area of 50 acres where flood water runoff would be slowed down and spread out over a large area through the construction of a series of bunds and associated land leveling.

7) Innovative Design Concepts

A number of improved and innovative design and design concepts were introduced by the Project. These included a new concept for delay action dams, improved channel lining techniques, gabion construction techniques, the infiltration gallery concept, use of

inverted siphons at nullah crossings and the idea of using engineered bunds and land leveling in a system of spreading runoff water over large areas.

8) Private Sector Strengthening

Construction contractors' capabilities were increased through Project activities. Oversight by BALAD construction supervisors helped the contractors gain skills and learn improved techniques of construction. They were required to carry out work at a higher standard than previously necessary. Twenty-eight contractors were assisted by the water sector's programs.

9) Strengthening Irrigation Department

The Project strengthened the Irrigation Department through repairing its equipment and training two of their engineers in design.

10) Water Management Advisory Committee

BALAD created and proposed the concept of a Water Management Advisory Committee⁶ in the Makran to address the urgent need to control exploitation of the limited groundwater resources of the region in light of the explosive growth of well irrigation.

11) Electro-resistivity Study

The Project arranged for an electro-resistivity survey of the Gwadar District. This survey will identify the areas in the district which show the greatest potential for significant and much-needed groundwater development.

12) Local Contribution Projects

In the water sector, BALAD carried out its first projects requiring significant beneficiary contribution in construction projects. These were the improvements to Basol and Sarchupi karezes.

⁶ D. Boggs, Concept Paper for the Formation of a Water Management Advisory Committee, BALAD Report, March 1991.

⁷ J.D. Brewer, BALAD Local Contribution Projects: Implications for Participatory Local Development Efforts, BALAD Report, October 1991.

13) Mirani Dam Report

The Senior Water Engineer carried out a study of the impact of the proposed Mirani Dam, offering an alternative concept of a dam in the Dasht Area.⁸

Water Sector Reports

D. Douglass, Phase 1 Water Sector Report, BALAD Report, February 1987.

D. Douglass, Interim Water Activities Report, BALAD Report, January 1988.

D. Douglass, Karezes of Makran, BALAD Report, January 1989.

D. Douglass, Water Sector Third Interim Report, BALAD Report, February 1989.

M. Yahya Khan, Dasht Dam Project (Preliminary Report), BALAD Report, November 1989.

M. Yahya Khan, Monitoring of Recharge Dam BALAD Project Balochistan, BALAD Report, June 1990.

J. Schoof and M. Yahya Khan, Water Resources Development and Its Management in Arid Zones, BALAD Report, June 1990.

D. Boggs, Concept Paper for the Formation of a Water Management Advisory Committee, BALAD Report, March 1991.

D. Boggs, End of Tour Report for the Water Resources Management Advisor, BALAD Report, May 1991.

M. Yahya Khan and D.M. Bradbury, Karez and Well Inventory of the Makran, BALAD Report, October 1991.

J.D. Brewer, BALAD Local Contribution Projects: Implications for Participatory Local Development Efforts, BALAD Report, October 1991.

⁸ M. Yahya Khan, Dasht Dam Project (Preliminary Report), BALAD Report, November 1989.

Figure 4.

IMPROVEMENT AND BORING OF KAREZES

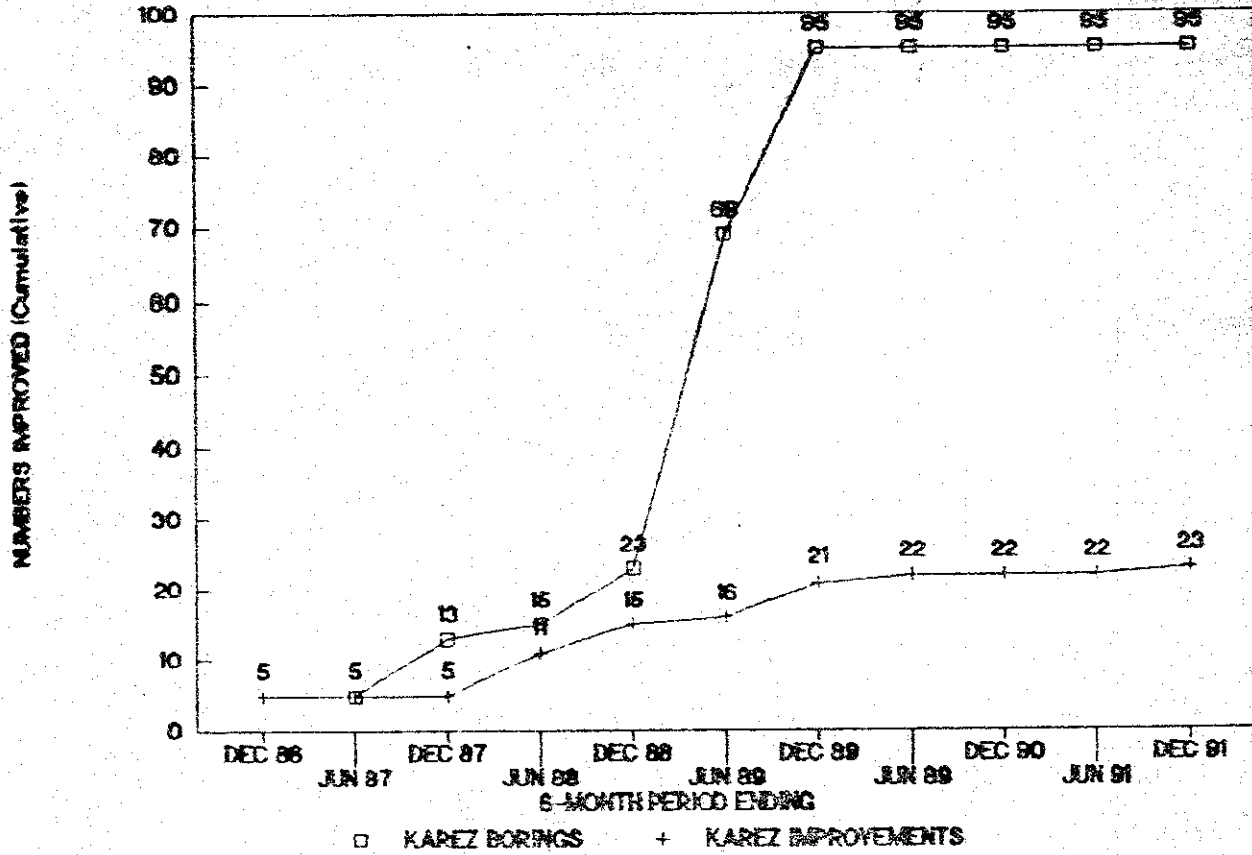


Figure 5.

WATER SECTOR CONSTRUCTION WORKS

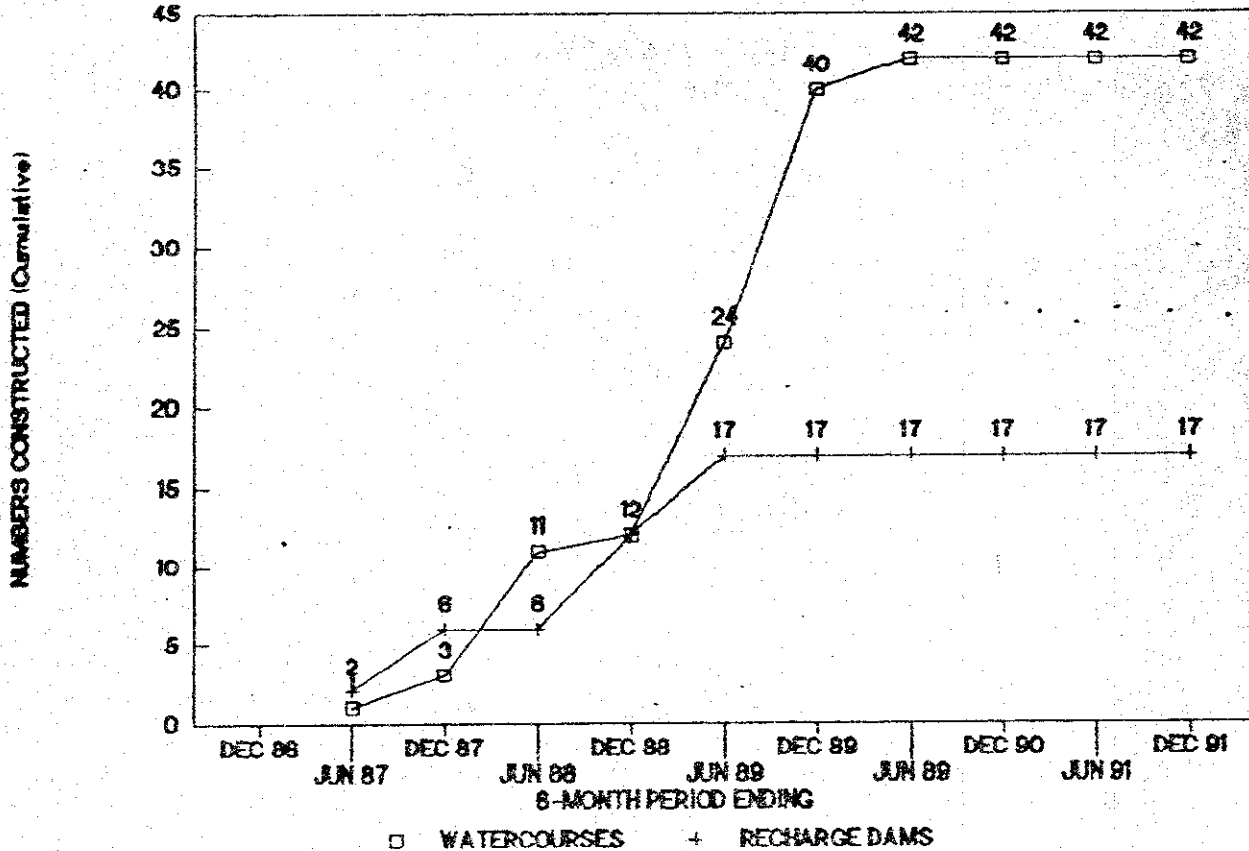


Table - 2

COMPONENTS OF BALAD PURPOSE AND PURPOSE AND OUTPUT INDICATORS	DATA							TARGET	ANALYSIS OF CURRENT TRENDS
	85-86	86-87	87-88	88-89	89-90	90-91	CUM. TO DATE		
8 WATER INFRASTRUCTURE									
OUTPUT LEVEL									
8. Karez and Korjo improvements									
a) Number improved	5	6	28	113	16		168		Over the years BALAD has made 168 improvements in karezes (extended and covered horizontal wells) and in korjos (open karezes) to increase the quantity and the stability of the supply of water to agricultural land, which were designed to benefit more than 135,000 agricultural acres. With some exceptions, the improvements are considered to have been successful and to have resulted in increased acreage under cultivation.
b) Acres of agricultural land to receive stabilized water supply	13,649	11,586	110,691	120,142	160		136,138		
c) Drilling mother wells		13	10	72			95	95	
d) Capping mother wells								95	
9. No. of dams constructed and improved		1	5	9	2		17	47	
									BALAD constructed 17 small dams the impacts of which on recharging the aquifers near the dams and thus on the supply of irrigation water are expected to be positive.

C. AGRICULTURE

1) On Farm Demonstrations

The expatriate Agronomist and PPMU Chief of Section Agriculture, with the help of two agricultural assistants, planned, organized and carried out 153 on-farm demonstrations at widespread locations throughout Turbat and Panjgur districts. Attempts were made to involve the Department of Agriculture to the fullest extent possible.

These demonstrations included:

- The introduction of improved varieties of wheat, barley, sorghum, alfalfa, oilseeds, melons, cucurbits, tomato, okra, capsicum, radish, broccoli, cabbage, cauliflower, onions, spinach and broadbean.
- Improved or innovative cultural practices, including proper plant spacing, introduction of raised bed cultivation for vegetables, use of fertilizers and proper pest management.
- Water management and irrigation techniques centered around furrow and furrow basin irrigation. Also demonstrated soil-plant-water relationships in date palm culture.
- Introduced appropriate mechanization at two levels: the use of Kubota powertiller/hand tractors in oasis areas where the location of the plot in the oasis or the size of the plot made operation of regular tractors impossible, and the use of hand-pushed seeders in vegetable planting.
- Demonstrated the positive effect of chemical nitrogen fertilizer on date palm.

2) Farmer Training

Between March 1989 and December 1991, the Project provided 594 learner-days of farmer training. The majority of this training was done on a one-to-one basis, with farmers during the course of the on-farm demonstrations. Other training occurred through farmer field days, farmer study tours and more formalized one-day training sessions focused on specific topics such as date palm pollenization and grape vine pruning.

3) Project Studies

- Marketing Studies: The Project undertook two major agricultural marketing studies; one on the marketing of Makran dates⁹ and one assessing the potential for marketing fruit grown in the Panjgur District.¹⁰

- Other Studies: The Project also conducted a study resulting in a program for improving date palm cultivation and processing.¹¹

4) Strengthening Agricultural Extension and On-Farm Water Management Departments

- Staff Training: One hundred and twenty-five learner days of staff training were provided by the Project through on-farm demonstrations, specific subject training and study tours.

- Commodity Procurement: The Project provided nearly \$40,000 worth of equipment to the departments including power tillers, vehicles, survey equipment, sprayers, planter, hand tools and reference books.

5) Private Sector Strengthening

- Date Processing: The Project provided technical support and training to the Shah and Sons Date Processing Factory in Turbat.¹²

- The Project also provided advice to a second date processing factory currently under construction in Turbat. It facilitated the hiring of private sector consulting services by the owner.

⁹ M.M. Irani and F.G. Masson, Marketing Makran Dates, BALAD Report, October 1991.

¹⁰ K.A. Siddiqi and F.G. Masson, Fruit Marketing Potential of Panjgur District, BALAD Report, November 1991.

¹¹ Zidan-E-Abdel-Al, A Program for Improvement of Date Palm Cultivation and Processing in Makran Division, BALAD Report, March 1990.

¹² M.M. Irani, Report on the Date Processing Factory, Turbat, BALAD Report, January 1990.

- Agricultural Supply Store: The Project encouraged the establishment and supported the operation of a local agricultural supply store in Turbat. The Project encouraged Karachi-based agricultural chemical companies to establish distribution channels in the Makran, facilitating distribution agreements with the Turbat agricultural supply store.

- Agricultural Credit: Although no formal studies were made, BALAD examined the availability of agricultural credit in the Makran, and the extent to which it was used by farmers.

- The Project worked towards establishing a farmer's agricultural machinery cooperative in Bal Nigor financed through commercial loans from a local bank.

6) Karez and Well Inventory

The Agronomist and the Senior Water Engineer prepared a comprehensive inventory of all Karezes and Wells in the Makran as of October 1991.¹³

¹³ M. Yahya Khan and D.M. Bradbury, Karez and Well Inventory of the Makran, BALAD report, November 1991.

7) Institutional Coordination

The BALAD agricultural activities involved and coordinated with the following institutions:

INSTITUTION	ACTIVITIES
Government of Balochistan	
Agricultural Extension Office, Turbat	On Farm Demonstrations Farmer Training
On Farm Water Management	On Farm Demonstrations
Agricultural Research Institute (ARI), Sariaab	On Farm Demonstrations Farmer Training Farming Systems Research Wheat Variety Screening
Arid Zone Research Institute (AZRI), Quetta	On Farm Demonstrations Livestock/Animal Health
Fruit Development Board, Quetta	Fruit Marketing On Farm Demonstrations
International Organizations	
International Center for Agriculture Research in Dry Areas (ICARDA)	Broad Bean Variety Screening
USAID-Funded Programs	
Managing Agricultural Research Technology (MART)	Women in Development Activity Farming Systems Research
Tribal Areas Development Project (TADP)	On Farm Demonstration Program
Genesys	Women in Development Activity

Agricultural Publications

M.M. Irani, Report on the Date Processing Factory Turbat, BALAD Report, January 1990.

Zidan-E-Abdel Al, A Program for Improvement of Date Palm Cultivation and Processing in Makran Division, BALAD Report and Video Tape, March 1990.

M.M. Irani and F.G. Masson, Marketing of Makran Dates, BALAD Report, October 1991.

M. Yahya Khan and D.M. Bradbury, Karez and Well Inventory of the Makran, BALAD Report, October 1991.

K.A. Siddiqi and F.G. Masson, Fruit Marketing Potential of Panjgur District, BALAD Report, November 1991.

D.M. Bradbury, End of Tour Report, BALAD Report, December 1991.

Figure 6.

AGRICULTURAL ON FARM DEMONSTRATIONS

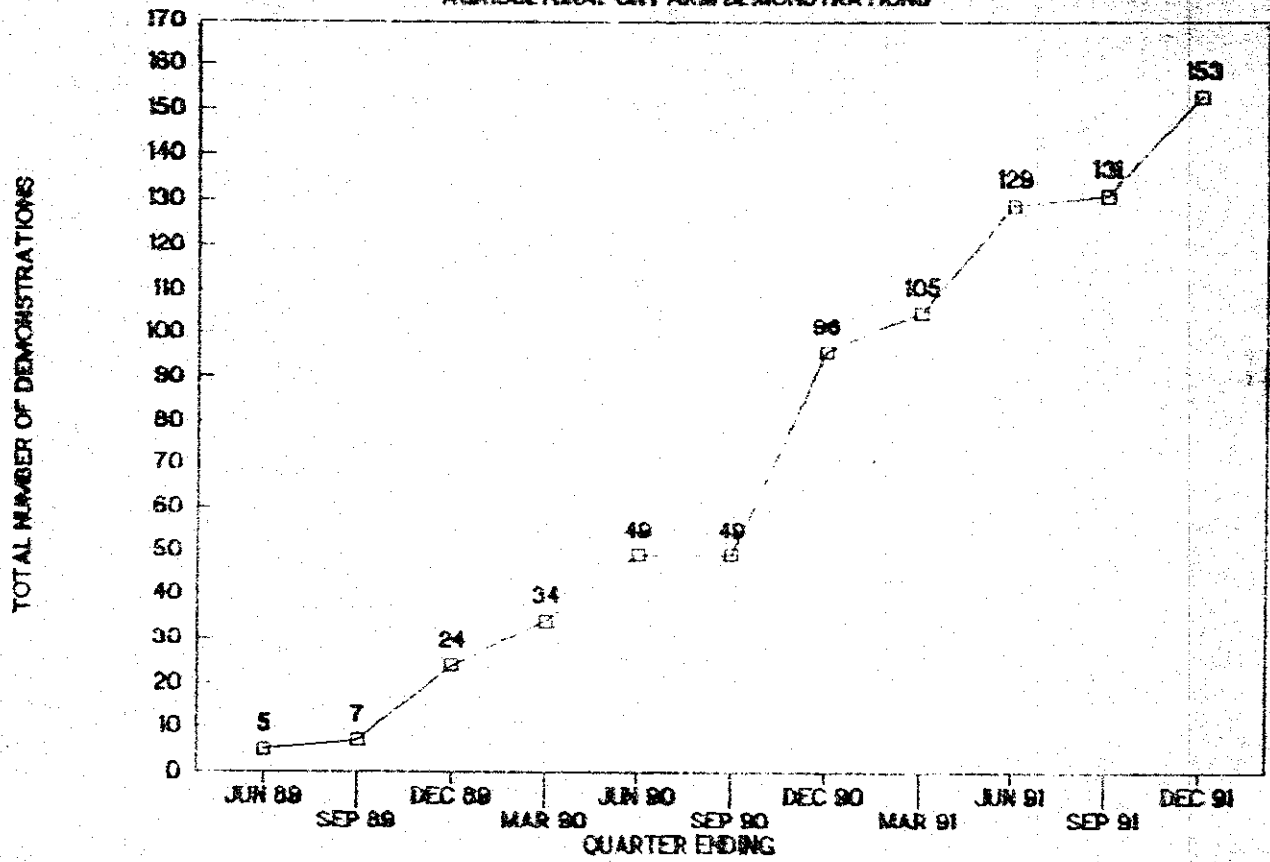
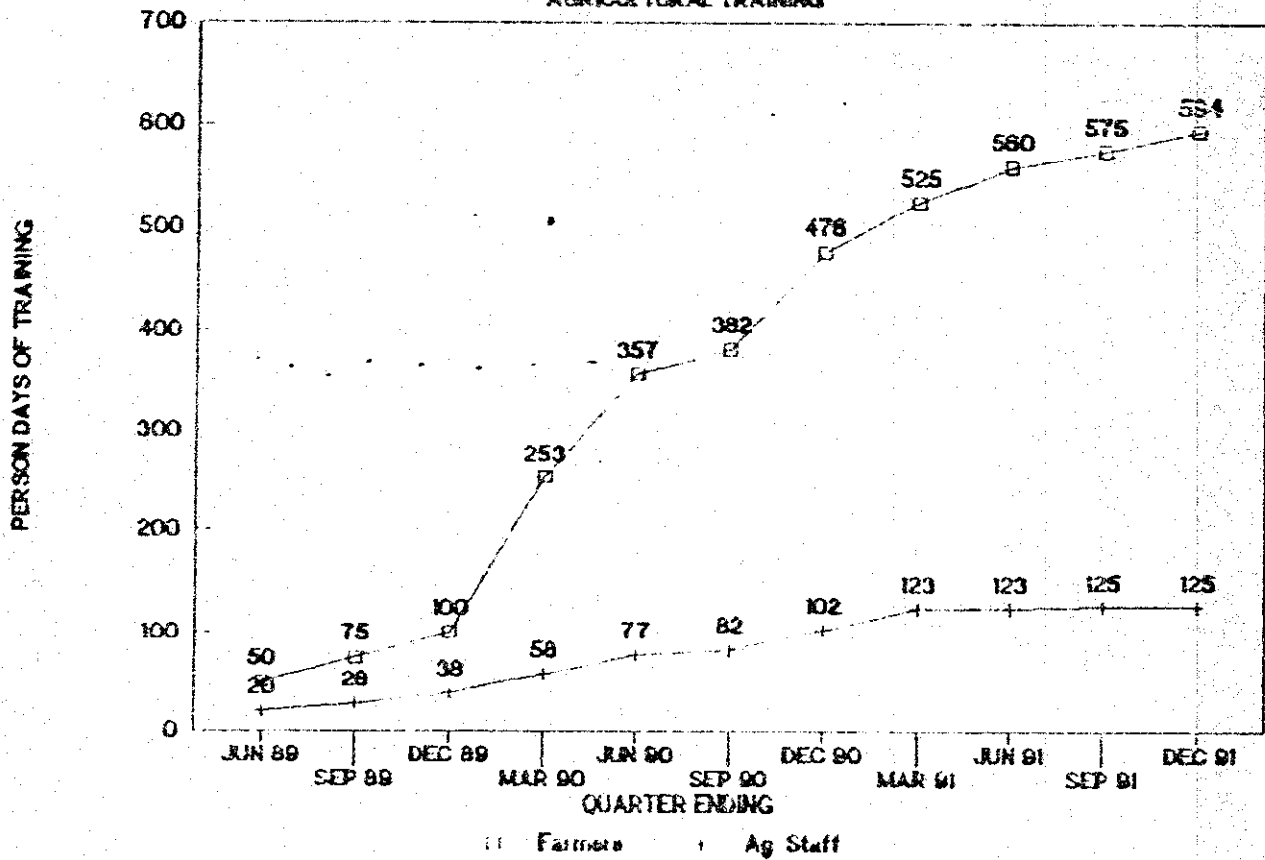


Figure 7.

AGRICULTURAL TRAINING



COMPONENTS OF BALAD PURPOSE AND PURPOSE AND OUTPUT INDICATORS	DATA						TARGET	ANALYSIS OF CURRENT TRENDS
	85-86	86-87	87-88	88-89	89-90	90-91	CUM. TO DATE	
C AGRICULTURAL DEVELOPMENT								
PURPOSE LEVEL								
10. Agriculture Extension Department implementation effectiveness: Rating				1	2	2		The performance rating of the Agricultural Extension Department in the Mekran improved only from a level of "poor" to one of "fair", in spite of the training and equipment provided by BALAD (indicator # 14).
OUTPUT LEVEL								
11. No. of on-farm demonstrations				7	42	104	153	Since beginning in June 1989, the small BALAD agricultural program has conducted 129 on farm demonstrations and provided 1560 learner days of training to farmers in agronomic practices. Anecdotal information suggests that the on farm demonstrations, such as those for grape vine pruning and introduction of better wheat varieties, are resulting in follow-on use by farmers. It is too early to judge, however, whether any of the demonstrated improvements are permanently being adopted by Mekran's farmers.
12. Learner days of farmer training				75	307	212	594	(See the comments for indicator # 11).
13. No. of marketing studies completed						2	2	Two marketing studies concerning dates in the Mekran and fresh fruits in Panjour are to be completed in September and October, 1991.
14. Support to the Agricultural Extension Department								Moderate staff training and limited equipment have been provided by BALAD to the Agricultural Extension Department.
a) Staff training (Learner days)				28	54	43	125	
b) Value of equipment provided (US\$)					10,286	28,584	38,870	
15. Private Sector Agricultural Supply Outlets and Processing Enterprises Supported				2	2	1		BALAD supported a private sector input supply firm and a date processing enterprise.

D. SPECIAL DEVELOPMENT ACTIVITIES

Set up to allow rapid response to the felt needs of the area, Special Development Activities (SDA) concentrated on small construction projects not included in the other BALAD sectoral programs.

1) School Construction

- Boy's Schools: The Project constructed 36 boy's schools in all of the districts of the Makran.
- Girl's Schools: Sixteen girl's schools were constructed by the Project.

2) Maternity Home

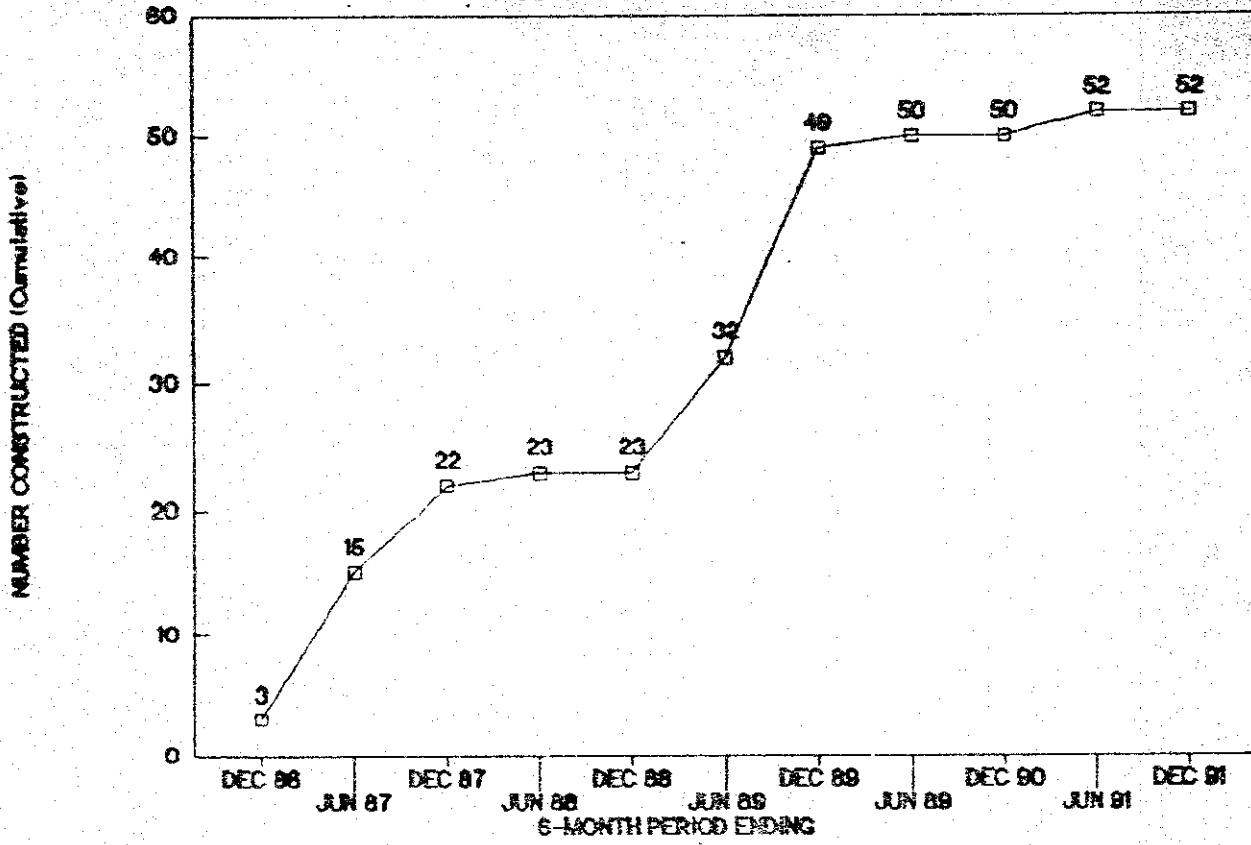
The Project constructed one Maternity Health Center in the town of Panjgur.

3) Private Sector Strengthening

Private contractors' capabilities in construction techniques and management were improved through the oversight of the construction supervisors of BALAD. Twenty-two contractors benefited from participation in the BALAD SDA activities.

Figure 8.

CONSTRUCTION OF SCHOOLS



E. PLANNING

The accomplishments in planning are summarized under the headings of Planning Studies and Institutionalization of Planning.

1) Planning Studies

BALAD produced thirteen reports related to planning, which are listed at the end of this section. The Socio-Economic Survey of the Makran¹⁴ and the Dasht Area Plan¹⁵ provide useful data and analysis. In the Regional Plan for Coastal Makran¹⁶ the Economic Base Analysis methodology was applied to the Gwadar District and development recommendations made. The two BALAD Work Plans¹⁷ (December 1990 and June 1991) illustrate the use of planning techniques in Project management, including "objective trees" and resource-constrained scheduling. Other reports provide assistance for planning interventions in particular sectors and for the institutionalization of regional planning.

2) Institutionalization of Planning

BALAD has strengthened the Government of Balochistan Planning and Development Department (P & D) at the provincial and division levels and examined how regional planning can be better institutionalized at the division level.

Of particular importance were the BALAD "Planning in Makran" studies of October and December 1991.¹⁸ These studies explain how planning can be institutionalized at the level of the Makran within the context of the existing P & D structure. The recommendations of the studies were presented at the BALAD Planning Conference in Quetta on October, 8, 1991. The Conference, attended by Government of Balochistan officials and others, endorsed the recommendations.

¹⁴ N. Buzdar, Socio-Economic Survey of the Makran, BALAD Report, 1987.

¹⁵ R. Baloch, Dasht Area Plan, BALAD Report, June 1990.

¹⁶ T.D. Bunce, Regional Plan for Coastal Makran, BALAD Report, December 1991.

¹⁷ Balochistan Area Development Project Work Plan, December 1990; Balochistan Area Development June 30 Work Plan, June 1991.

¹⁸ C. Sweet and M.Y. Bajwa, Planning in Makran - Discussion Paper, BALAD Report, October 1991; Planning in Makran, A Study of the Policy, Institutional and Process Requirements of Effective Decision Making, December 1991.

- Planning and Development Department: BALAD assisted P & D in Quetta through technical assistance and on-the-job training in computerized information systems, and through procurement of computer hardware and software.
- Project Planning and Management Unit (PPMU) in Turbat: Training in planning was provided to the Project Planning and Monitoring Unit, a BALAD-related arm of P & D.
- Computer hardware and software were supplied to the PPMU.

Planning Publications

- S. Shepley, Planning and Development Department Planning Systems Analysis, BALAD Report, August 1986.
- S. Shepley, Regional Work Plan Status and Recommendations, BALAD Report, September 1986.
- N. Buzdar, Socio-Economic Survey of the Makran, BALAD Report, August 1987.
- Virgil Harrington, Report by International Computer consultant for Work Done at Planning and Development Department, BALAD Report, September 1987.
- R. Baloch, Dasht Area Plan, BALAD Report, June 1990.
- S. Silcox and G. Lane, Private Sector Investment Climate, BALAD Report, July 1990.
- Louis Berger International, Inc., Balochistan Area Development Project Work Plan, BALAD Report, December 1990.
- Louis Berger International, Inc., Balochistan Area Development Project June 30 Workplan, BALAD Report, June 1991.
- J. Cooper, A Preliminary Review of Fisheries Potential off the Balochistan Coast, BALAD Report, July 1991.
- J. Weiss and R. Baloch, Opportunities for Tourism in Balochistan: Preliminary Review, BALAD Report, August 1991.
- C. Sweet, M.Y. Bajwa, Planning in Makran - Discussion Paper, BALAD Report, October 1991.
- C. Sweet and M.Y. Bajwa, Planning in Makran, A Study of the Policy, Institutional and Process Requirements of Effective Decision Making, BALAD Report, December 1991.
- T.D. Bunce and R. Baloch, Regional Plan for Coastal Makran, BALAD Report, December 1991.

Table-4

COMPONENTS OF BRLAD PURPOSE AND PURPOSE AND OUTPUT INDICATORS	DATA							TARGET	ANALYSIS OF CURRENT TRENDS
	85-86	86-87	87-88	88-89	89-90	90-91	10 DATES		
0 PLANNING AND OTHER									
PURPOSE LEVEL									
16. Permanent Metraa Planning Unit established								No	The performance rating of the Turbat-Unit (PPMU) in conducting planning activities improved only from a level of "poor" to one of "fair", in spite of the training and equipment provided by BRLAD (indicator # 19). As of September 1991, the permanent Metraa Planning Unit had yet to be established, although it was under active study.
17. PPMU implementation effectiveness in planning: Rating	1	1	1	2	2	2		Yes	See the comments for indicator # 161.
18. No. of operating primary schools in Metraa	550	575	577	604	607	n.a.		No	The notable increase in the number of operating schools in the Metraa was significantly influenced by the construction by BRLAD of 52 primary schools (indicator # 21).
OUTPUT LEVEL									
19. Project Planning and Management Unit/Planning and Development Department									BRLAD has over the years strengthened the PPMU in Turbat through training in planning, by making computers, software and motor vehicles available, and by providing office space on the BRLAD compound. In previous years the project provided computer hardware and software, and related staff training, to the Planning & Development Department in Guetta.
a) No. of staff trained through BRLAD	7		4	2	2			17	
b) No. of computers and vehicles made available	0	0	0	4	6	7			
20. No. of planning studies completed	1	3		2	3	0		14	BRLAD prepared planning and management studies ranging from a socio-economic profile of the Metraa to a Concept Paper on the proposed Water Management Advisory Committee.

COMPONENTS OF BALAD PURPOSE AND PURPOSE AND OUTPUT INDICATORS	DATA							TARGET	ANALYSIS OF CURRENT TRENDS
	85-86	86-87	87-88	88-89	89-90	90-91	CUM. TO DATE		
PLANNING AND OTHER (contd.)									
21. No. of schools constructed:									(See the comments for indicator # 18).
Total	4	15	1	27	3	2	52		
a) Boys	3	14	1	13	3	2	36		
b) Girls	1	1		14			16		
22. No. of completed activities with significant beneficiary participation				7	42	106	155		BALAD's 131 completed activities with significant beneficiary contribution here, with two exceptions, the on farm demonstrations to which the farmers contributed - at a significant opportunity cost to themselves - land, labor, and the irrigation water.

CHAPTER III

ASSESSMENT

A. SECTORAL COMPONENTS

1. ROADS

a. Analysis

Roads improvements have provided significant benefits to the people of the Makran. Travel times have decreased between major population centers. The roads are not as rough, presumably resulting in lower operations and maintenance costs for transporters. Many benefits are suspected but have not been measured, such as increased availability of products at lower cost. Since improvement of the Turbat/Gwadar road, regular bus service has commenced where none had existed before. Fresh produce from Panjgur is more readily available and fresh fish from the coast is now sold year around in the Turbat market. The increase in traffic flow on the roads, as recorded in the BALAD report on traffic counts and road conditions of the Makran, has been dramatic. While it is not possible to measure the extent the road improvements have contributed to this, the TA Team is confident BALAD has had a substantial impact.

1) Design of the Roads Component

The poor condition of the road network in the Makran has always been viewed as one of the major constraints to development. Of some 3,000 kilometers of roads, less than 100 kilometers were paved, and most of them lacked drainage structures. For the most part, roads consisted of single tracks which had their inception in the days of camel traffic.

The Project Paper envisioned that the upgrading and maintenance of important roads would tie the area more closely to the rest of the country, increase the flow of goods and services, and stimulate economic growth.

The LBII contract included specific requirements in regard to the road network of the Makran. The contract outlined the following works to be accomplished in the Road Sector:

¹ Louis Berger International, Inc., Traffic Counts and Road Condition Survey, BALAD Report, December 1991.

Road Maintenance	900 kilometers
Road Rehabilitation	600 kilometers
Drainage Structures	30 kilometers

Associated with all of these works, the Project was to work through the PPMU to strengthen and improve the road maintenance capabilities of C&W, and to provide training in design, construction practices, quality control, planning and maintenance of roads, and maintenance and operation of equipment. In addition, PPMU was to assist in prioritizing the work and scheduling systematic approaches to road upgrading and maintenance.

The success of these efforts required that the Government of Balochistan create a PPMU with full powers to plan and implement project activities from the Turbat headquarters of Makran Division. The lack of commitment on the part of the GOB to staff the PPMU and delegate the necessary authority was demonstrated throughout the life of the Project by its failure to staff key positions, including that of the PPMU Road Engineer.

Pressures to construct visible physical works prompted changes early in the Project. Institutionalization activities were generally placed on the back burner, as the LBII TA Team had to design, implement and monitor almost all of the projects under BALAD.

Beginning with the Transition Phase of the Project in 1989, and continuing through the end of the LBII contract, efforts were re-directed towards achieving the institutional goals which had not been realized. The design of this component overestimated the commitment and ability of the GOB to effect the bureaucratic changes assumed in the Project Paper.

2) Road Rehabilitation

a) Stage I Rehabilitation

There was a need for quick action and visible progress in upgrading roads in the Makran. Aware of the limited amount of equipment available with C&W, and the low skill levels of C&W staff, the Project implemented a program of rehabilitation consisting of simple motorgrading of the road surface, smoothing the surface, widening the road to two lanes, and making minor adjustments to the vertical and horizontal alignment. The average speeds possible over these roads after the improvements were in the range of 20 to 30 km per hour. The average speed and general road conditions were much improved and served the immediate need.

b) Stage II Rehabilitation

During the latter part of 1989, USAID and the TA Team saw a need for a change in direction of the Project. The Project's initial objectives had been served to a degree, but certain other aspects of the Project had not been accomplished. In the road sector, it a need was felt to establish acceptable geometric and other road features to provide the foundation for a road network that would meet the future development needs of the Makran.

A decision was made to redefine road rehabilitation. BALAD developed improved geometric standards which assumed speed designs up to 100 kilometers per hour.² These standards provided reasonable speed designs for given terrain and conditions. Concepts were developed concerning typical sections, travel lane widths, shoulder width, road elevations, positive drainage and vertical and horizontal alignments.³

The redefinition of road rehabilitation, designated as Stage II rehabilitation, was a major change. USAID agreed with the principles involved and sanctioned their implementation. Additional equipment was procured and additional training of C&W staff was carried out.

Overall, the progress of Stage II rehabilitation was slower than Stage I, given the additional requirements of machinery and trained personnel. BALAD conducted mostly on-the-job training of equipment operators during this program. Fuel shortages, equipment breakdowns and slow payment to C&W exacerbated the situation. With the arrival of additional equipment and the initiation of arrangements to advance payments from PPMU funds when necessary to keep work from stopping, these problems were, more or less, overcome. By the time road rehabilitation activities were terminated by USAID in 1991, daily progress was reaching acceptable levels.

3) Road Maintenance

Road maintenance operations began in 1987 with the 120 km. Turbat-Mand Road. This road, as most in the division, consisted of a single-lane depressed track. The improvement plan for this and subsequent roads added to the maintenance program was directed toward continuous maintenance. This resulted in a form of

² Louis Berger-International, Inc., Geometric Standards for Road Works, BALAD Report, May 1990.

³ T. McKenzie, Road Rehabilitation, Concepts and Methodology, BALAD Report, March 1990.

upgrading consisting of widening the track to provide two lanes where possible and improving the road surface.

The maintenance operation consisted of a fleet of three motorgraders travelling in tandem, blading and shaping the road bed in a continuous operation from the point of beginning to the end point. Usually, three to five passes in this fashion completed any cycle. Several cycles of this procedure were applied to most of the selected roads before this activity was dropped in March 1989. The decision to stop this work was made because the TA Team and USAID felt that C&W must take responsibility for road maintenance after the Project ended.

The maintenance carried out by C&W outside the BALAD sphere of influence is done on an ad hoc basis, mostly where rains cause severe degradation of the road surface. The TA Team began work on developing a comprehensive maintenance management program for the Division, but the early termination of the Road Engineer's position and curtailment of Road Sector related activities prevented its completion.

4) Other Construction Activities

a) Drainage Structures

The majority of the drainage structures built by the Project consisted of low water crossings, constructed of compacted fill sandwiched between upstream and downstream walls to limit the erosion of the road surface. The walls were made of stone rubble masonry or rock-filled wire baskets called gabions. Initially the Project favored the gabion-type construction as being the most cost effective. However, experience showed the stone rubble masonry design to cost about the same.

After initial damage to the roadways within low water crossings during floods, BALAD began using reinforced concrete slabs to prevent lifting.

Some box culverts were constructed by the Project, but it was felt that less expensive structures were necessary. The Project attempted to introduce pipe culverts in the area. One inexpensive method the Project experimented with was the use of discarded oil drums. One such culvert was put in using drums obtained locally. It functioned well and an outside source of the many drums needed to expand this type of activity were located. Unfortunately, tax and duty regulations made it impractical to purchase them. Reinforced concrete pipe was another method the Project felt would be appropriate. No manufacturers in the area, however, had forms large enough to make the pipe, and transportation costs of pipe made elsewhere were prohibitive. Project activities were terminated before this problem could be solved.

The construction of all drainage structures was contracted by PPMU to private sector contractors. BALAD provided the design and construction supervision for these sub-projects. In general, the work was done in a satisfactory manner, but time and cost overruns were frequent.

b) Shingling and Paving

To alleviate some of the social problems present at the beginning of the Project, BALAD undertook paving and shingling of town and village roads. Paving took place exclusively in Turbat, and was carried out in five phases. All five stretches of important town roads in Turbat were asphalt paved, and associated drainage structures were constructed.

This activity was extremely well accepted by the local population and helped to change many of the negative attitudes held about the Project in Turbat.

As with the construction of drainage structures, these sub-projects were contracted by PPMU to private sector contractors. The contractors had to use very small asphalt mix machinery and transport the asphalt from the mixing site to the area being paved by donkey cart, which resulted in a lack of uniformity of application. However, the quality of the work done was of a higher standard than seen in other areas of the Makran.

It was recently noted that C&W adopted many of the methods used by BALAD in its recent paving of the road between the Government Circuit House and the Turbat Airport.

c) Link Road

Separate from the LBII contract but under the umbrella of BALAD, USAID constructed the Kech River Bridge and associated approach roads. There was, however, no link between the end of the approach road to the bridge and main Turbat town road. The Project undertook construction of a 573 meter paved road completing this link. Construction was carried out by the private sector under a PPMU contract.

d) Realignment of Talar Gap

The Realignment of Talar Gap was a unique sub-project of BALAD in that it involved a substantial amount of blasting. Only one contractor was qualified to do this work. The contractor's performance was hindered by delays.

e) Emergency Repairs to Kech River Bridge

In July 1991 BALAD was asked to undertake emergency repairs to the Kech River Bridge, which had been damaged in a flood the previous February. The Mission's Office of Engineering had encountered delays in contracting for the permanent repairs. The necessary survey and design work were immediately carried out. The work consisted of stone work below the secondary bridge, channelization below the secondary bridge and the five culverts, and repairs to one of the culverts.

The PIL-14 force account mechanism was utilized through the PPMU to use C&W equipment and operators, instead of going through the lengthier tendering process.

5) Institutionalization within Communications & Works Department

Institutionalization of road works within the C&W has been an important objective of BALAD. Largely put on hold during the Infrastructure Phase of the Project, it grew to be a major activity during the Transition Phase. This activity was thoroughly analyzed in the December 1990 Work Plan.

The Work Plan included an institutional study of a possible Public Authority which would take over responsibility from C & W for selected primary roads in the Makran.

At the end of the study period a decision would be required that would determine the future of C & W as it now exists [in the Makran]. If ... it is established that the productivity and accountability of C & W cannot be greatly improved the public authority "Cell" would become responsible for all or a selected number of primary roads and perhaps even for major construction/rehabilitation projects undertaken on lower level roads. C & W would become responsible for lower classification roads and for activities which are not costly to perform.

The planned institutional and financial feasibility study of the Public Authority was not carried out because of the Pressler Amendment-related changes to BALAD in early 1991.

During the Transition Phase, BALAD developed and implemented a number of programs and systems which, if adopted and actually implemented by C&W, would go a long way towards the goal of institutionalization. These include:

⁴ BALAD Work Plan, December 1990, p. R-3.

Kilometer Post System: The Project introduced this methodology and installed 400 kilometer posts on the Turbat-Gwadar and Hoshab-Panjgur roads. These will support such activities as road inventories, maintenance management and planning.

Road Classification System:⁵ A system of classifying roads is an integral part of a road work management program. BALAD developed a system and classified all the roads of the Makran as being either Primary, Secondary or Rural Roads.

Geometric Standards for the Makran:⁶ Concepts concerning typical sections, travel lane width, shoulder width, road elevations, positive drainage and horizontal alignments were developed, presented and adopted by the C&W. Unfortunately, we have not yet seen these implemented in C&W's work outside of the BALAD-supervised operations.

Road Rehabilitation Concepts and Methodologies:⁷ This paper consolidated and standardized the methods and procedures for the Road Rehabilitation operations of BALAD. As such, they are a guide for C&W's future rehabilitation operations.

Road Condition Rating System:⁸ In order to proceed with any road rehabilitation and/or maintenance program, the agency responsible for allocation of resources needs a systematic way of deciding where they are needed most. This system creates a methodology and criteria for rating the conditions of the roads in the Makran. With two exceptions, all Primary Roads of the Makran were rated using this system.

Traffic Counts Survey:⁹ Traffic counts are another necessary piece of information needed in prioritizing road rehabilitation and maintenance operations. The Project developed methodologies and carried out traffic counts on all the Primary Roads of the Makran.

⁵ Louis Berger International, Inc., Road Classification System, BALAD Report, May 1990.

⁶ Louis Berger International, Inc., Geometric Standards for Road Works, BALAD Report, May 1990.

⁷ T. McKenzie, Road Rehabilitation Concepts and Methodology, BALAD Report, March 1990.

⁸ Louis Berger International, Inc., Road Condition and Rating system and Traffic Counts Survey, BALAD Report, December 1991.

⁹ Ibid.

6) Training

BALAD presented on-the-job training to the C&W crews throughout the Road Rehabilitation and Maintenance Operations. This training has resulted in increased productivity and higher quality work being done under BALAD supervision. The training envisioned in the original contract, to be done through PPMU, did not occur.

7) Equipment Procurement and Repair

Lack of equipment was a major problem faced by BALAD throughout the life of the Project. A considerable amount of machinery was procured at a cost of \$ 3.1 million, as shown in Table 5. This alleviated the situation somewhat, but frequent breakdowns were common, and cost the Project a lot in terms of money and reduction in outputs. USAID also paid for equipment repairs at a cost of over \$ 310,000.

Although BALAD established forms and procedures for Daily and Periodic Equipment Preventive and Maintenance, as well as providing mobile shops and shop equipment, the TA Team is concerned that a large number of pieces of this equipment is not being properly maintained. Steps must be taken to protect this substantial investment of AID once the TA Team departs.

8) Force Account Funding (PIL 14)

One of the most important factors contributing to the success of BALAD's Road Sector activities was the establishment of Force Account Funding through PIL 14. This established a revolving fund in C&W whereby BALAD leased equipment and operators directly from the Department. This provided the Project with a source of equipment and staff. Lengthy contracting procedures were avoided and efforts towards institutionalization were facilitated.

USAID provided equipment to C&W and then rented that equipment back for BALAD projects. Total hire charges were \$ 932,665, as shown in Table 5. The money returned to C&W for equipment rental was to go towards maintenance of that equipment. The TA Team is concerned that adequate maintenance may not be undertaken by C&W. The lengthy process of reimbursement through USAID, GOP, GOB and finally to the Makran, created problems in daily operations on many occasions.

9) Private Sector Strengthening

As discussed under each of the construction activities (drainage structures, paving, link road, realignment of Talar Gap, etc.), BALAD had considerable interaction with private sector contractors.

TABLE 3

ASSISTANCE TO C&W, MAKRAN, BALOCHISTAN
FROM USAID/PAKISTAN, 1986 - 1991

ASSISTANCE TO C&W	COSTS	
	Rs.	U S \$
PURCHASE MADE BY USAID:		
Heavy Equipment donated to C&W through USAID A C E and BALAD	55,626,091	2,927,689
Workshop Hand Tools and Equipment	3,392,165	176,535
TOTAL	59,018,256	3,104,224
EQUIPMENT MAINTENANCE PAID BY USAID		
HIRE CHARGES PAID BY USAID:		
Road Maintenance Hire Charges	2,859,322	150,491
Road Rehabilitation Hire Charges	14,596,727	768,249
Katch River Bridge Remedial	264,566	13,925
TOTAL	17,720,615	932,665
GRAND TOTAL:	82,660,525	4,350,555

NOTE: Conversion rate Rs. 19.00 = 1 U.S. Dollar

02/11/01/01/01/01

These contractors, working under close BALAD supervision, were required to undertake larger projects than they had in the past, adopt new technologies and procedures, and maintain a higher quality of work than had previously been required of them. In this way, BALAD strengthened their capabilities to do higher quality work.

A list of the private sector contractors who worked on BALAD roads projects is provided in Section III.B (Management of Construction).

b. Lessons Learned

1) Road Engineering

BALAD developed improved geometric standards which assumed speed designs up to 100 kilometers per hour. Concepts were developed concerning typical sections, travel lane widths, shoulder width, road elevations, positive drainage and vertical and horizontal alignments.

Low water crossings were designed and constructed using gabion-type construction as this was considered most cost effective. However, the stone rubble masonry design was discovered to cost about the same.

The Project attempted to introduce pipe culverts in the area using inexpensive methods such as discarded oil drums. An outside source of drums was needed to expand this type of activity. Unfortunately, tax and duty regulations made it impractical to purchase them. Reinforced concrete pipe was another method the Project felt would be appropriate.

Geometric standards concepts for typical sections, travel lane width, shoulder width, road elevations, positive drainage and horizontal alignments were developed, presented and adopted by the C&W.

For a more detailed discussion of technical lessons learned, the reader is referred to the various BALAD Road Sector reports mentioned above and design documents for the various sub-projects, on file in the PPMU library.

2) Strengthening C & W

Creating changes in a government department as large and well-established as C&W is a very slow and arduous task. In spite of substantial assistance from USAID for equipment and training, C&W performance in the Makran improved little, from a rating of "poor" to one of "fair". That rating is a subjective assessment by the TA

Team, reflecting, however, years of close association. It appears that some combination of GOB political will, administrative support, and financial and staff capability was lacking.

Yet for significant sustainable improvement in the road network of the Makran, changes must take place, such as adoption of the methodologies and procedures developed by BALAD.

Equipment operators and supervisory personnel in C&W deputed to road rehabilitation and maintenance operations are mostly under-trained. A significant amount of training has to be built in to any project hoping to raise the quality of work carried out by government service employees. The most effective training to C&W road maintenance and rehabilitation staff is imparted on-the-job.

C&W has no organized, coherent strategy for either road rehabilitation or maintenance. It is done on a mostly ad hoc basis. Formal adoption and enforcement of the concepts, methodologies and systems developed by BALAD will go a long way in improving the services of the C&W to the people of the Makran.

Equipment provided to C&W by USAID is not being maintained so as to guarantee any real degree of useful life. Much more training in equipment operation and maintenance is necessary. A machinery maintenance management system needs to be implemented by C&W. Resources for the procurement of tools, repair equipment, and spare parts must flow to the Division.

To protect its considerable investment in heavy equipment in the Makran, USAID may wish to consider ways it can monitor its operation and upkeep.

C&W management personnel are moved around too frequently; unless a supervisor or engineer is allowed to remain at post for at least 2 1/2 - 3 years, no continuity can be developed and no future replacements can be trained.

A better and more consistent means of cash flow needs to be developed from the central government to the outlying districts. Work is often stopped for lack of payment. Fuel vendors often refused to deliver petroleum, oils and lubricants because of long overdue payments.

c. Development Opportunities

1) The Road Sector Work Program to Strengthen C & W

Before the Pressler Amendment caused the BALAD Project to be scaled back, the Head Road Engineer created a detailed Road Sector Work Program¹⁰ which was delivered to USAID. This program consisted of improving the overall institutionalization of the C&W and the PPMU in four areas:

- o Maintenance Management Program (MMP)
- o Equipment Management Program (EMP)
- o Capital Improvements Program (CIP)
- o Training Program (TRAINING)

The Maintenance Management Program looked at the work expected to be accomplished by the C&W, breaking it down into its three specific components; labor, equipment and materials.

The Equipment Management Program was intended to provide a means to monitor equipment in the inventory and to determine condition of that equipment so that future replacements could be predicted, periodic maintenance could be programmed, and operations and mechanics trained in the use and maintenance of each piece of equipment.

The Capital Improvements Program was set up so that C&W as well as the PPMU could look ahead as far as five years and estimate major expenditures for construction, rehabilitation and equipment or facilities replacement. For either a Maintenance Management or Equipment Management Program to be effective, a Capital Improvements Program is essential.

This work program can form the basis for improvement of any road agency in a similar situation. It should be implemented in the Makran. Any actual implementation should be done under the direction of an experienced Maintenance Management/Equipment Management Engineer.

¹⁰ Louis Berger International, Inc., Road Sector Work Program, BALAD Report, April 1991.

2. WATER

a. Analysis

1) Design of the Water Component

The Project Paper stated that activities related to water development would include underground water utilization and karez improvement; design and construction of dams and diversion structures for water retention, storage, use of surface water runoff; and On Farm Water Management.

Activities to be associated with water utilization and karez improvement included drilling of mother wells to tap deeper aquifers, capping karez wells to reduce maintenance and prolong operational life, and construction of small delay action dams to increase water infiltration to recharge downstream karezes.

All of these activities took place with the exception of the capping of mother wells which was dropped due to a lack of interest on the karez owners part, and On Farm Water Management which was to be carried out by an Agronomist. The Agronomist was not fielded until late in the Project. At that time, the On Farm Water Management component was transferred to the Agriculture scope of work.

2) Phased Implementation

Activities in the Water Sector were implemented in three phases. The first phase, covering approximately the first year of the Project, concentrated on assessing the available water data, collecting additional data and designing and implementing prototype water development schemes. Progress during this phase was slow, caused by delays in mobilizing sub-contractors and staffing the PPMU. Local resistance to the foreign presence resulted in vandalization of many of the weather and water flow monitoring stations installed by the Project. However, this prototype phase of water sector activities was successful in that a sufficient understanding of the hydrology of the Makran was gained which facilitated the design and implementation of useful interventions.

The second phase of activities concentrated on physical works, including design, construction and monitoring of many structures. This phase overlapped with the end of the first phase and carried on into 1991, after the implementation of the third phase. The Project carried out karez and korjo improvements, construction of delay action dams, and lining of water channels. Generally, these had a positive effect in the region but questions arose as to what effects the increased exploitation of water would have in the future.

For details of technical information including standardized designs and assessments of these engineering interventions, the reader should refer to the two interim evaluations of the BALAD Project¹¹, and the three Water Sector Interim Reports by the TA Team's Senior Water Engineer¹². Major findings are summarized below:

As reported in the 1990 evaluation, "accomplishments with respect to infrastructure are mixed but generally positive". The evaluation found the karez boring program had both its successes and failures, and that the general impression among farmers was not favorable. They recommended that the program be discontinued; the TA Team complied with this recommendation.

The Evaluation found the installation of siphons and channel linings to be successful and well received by karez owners. Infiltration galleries were viewed as a partial success. Where they did increase flow of korjos, the rate of flow was not greatly increased, but rather the number of days it flowed was improved. Farmers' impressions were that any increase in water was minimal, but that maintenance costs were reduced.

Many delay action/recharge dams were constructed by the Project. Some of the dams were successful; some failed when floods occurred. Due to the scarcity of hydrologic and meteorological data, this was to be expected. The effect of delay action dams on groundwater resources remains uncertain. Water flow rate measurements have not indicated changes in the average flow rates of karezes after construction of the dams, but there has been below normal rainfall over the last few years.

In December 1990, the third phase of water sector activities began. This phase was aimed at rationalizing water resources development in the Makran. The main issues addressed in this phase, as outlined in the December 1990 Work Plan, were (1) the types of water resource development structures and interventions to be undertaken; (2) to what extent GOB water-related line agencies should be involved in the implementation of water sector activities and what, if anything, needed to be done to strengthen them; (3) what new activities should be initiated; and (4) the necessity of addressing the possibility of excessive groundwater depletion.

¹¹ R. Laporte, R. Hill and J. Addleton, Interim Evaluation of the Baluchistan Area Development Project, March 1988; and Development Alternatives Inc., Interim Evaluation of the Balochistan Area Development Project, November 1990.

¹² D. Douglass, Phase 1 Water Sector Report, BALAD Report, February 1987; Interim Water Activities Report, BALAD Report, January 1988; and Water Sector Third Interim Report, BALAD Report, February 1989.

Prior to implementation of this phase, the Expatriate TA Team was evacuated because of the Gulf War. While they were out of the country, the enforcement of the Pressler Amendment put a halt to all water sector construction activities and the Expatriate Water Engineer position was deleted. Therefore, the activities implemented during this phase took two tracks: attaining some of the outputs envisioned in the December 1990 Work Plan, and bringing the Project to an orderly close.

A revised Work Plan was developed in June 1991¹³ which outlined activities to be undertaken to satisfy both requirements. Key elements of this Work Plan were the collection of data to support future planning of water resources in the Makran and the completion of minor construction projects which had been put on hold during the evacuation.

Data collection activities included completing a comprehensive karez and well inventory of the Makran¹⁴, establishing permanent measuring points at most of the wells, so future water table levels can be monitored, and the sub-contracting of an electro-resistivity survey of Gwadar District. This survey will identify areas where there is potential for ground water development. Arrangements were made with the Center for Engineering Excellence in Lahore to develop a scope of work and cost estimate for installing an adequate hydrometeorologic monitoring system in major watersheds of the Makran. This activity was not carried out because the Center was unable to mobilize.

Construction activities included small scale repairs to a few structures in the Turbat and Panjgur areas. In addition, two local contribution projects at Basol and Sarchupi Karezes were selected and carried out with karez owners.¹⁵

3) Issues in Water Resources Development

The issues raised in the December 1990 Work Plan remain valid. They should be considered by any agency undertaking development in the Makran. These issues may also be important to water resources development projects in other remote arid areas.

¹³ BALAD June 30 Work Plan, BALAD Report, June 1991.

¹⁴ M. Yahya Khan and D.M. Bradbury, Karez and Well Inventory of the Makran, BALAD Report, November 1991.

¹⁵ J.D. Brewer, BALAD Local Contribution Projects: Implications for Participatory Local Development Efforts, BALAD Report, October 1991.

a) The types of water resource development interventions to be undertaken.

From the results of previous work, certain conclusions can be drawn about the types of structures that should be built and interventions undertaken in the Makran. The delay action dams built to date have affected karez downstream, but the magnitude of this impact has not been determined. The low rainfall of the last few years is also a contributing factor. Nevertheless, construction of new dams should be undertaken only after data on impacts on water resources is available.

Drilling of mother wells has had varying degrees of success. Some have produced water, some have not. Future drilling of karez mother wells should be undertaken only when there are clear indications that drilling will yield significant increases of flow. This can probably only be done in certain areas where other previously drilled wells are yielding steady water output.

As discussed above, korjo infiltration galleries have not yielded significant increases of water, but they have saved the farmer time and money in karez maintenance. Because BALAD has installed infiltration galleries in most of the suitable areas, there is limited scope for further construction of this type of work.

The Project constructed one flood water diversion scheme whereby runoff water was spread, through a series of designed and engineered bunds, over approximately fifty acres of land. The scheme experienced a storm runoff event, and the structure operated as designed. The farmer was able to plant much of this area to fodder. This was a significant accomplishment and introduced a new concept of water harvesting. This activity has potential to significantly increase acreage cultivated as well as increase groundwater recharge. It should be looked at as an alternative to delay action dams.

b) The involvement of GOB water-related line agencies in the implementation of water sector activities, and what needs to be done to strengthen the agencies.

Lack of interest by the Department of Irrigation in the Makran kept BALAD from ever forming a close working relationship with it. Efforts to more fully involve this line agency, as well as the Agricultural Engineering and Public Health Engineering departments were curtailed as the funding for Water Sector Activities was eliminated, and the expatriate engineer did not return to Pakistan. The completion of two local participation projects, however, demonstrates how development can be done outside of these institutions.

c) What new activities should be initiated.

New activities to be undertaken during the third phase of the Water Sector activities included floodwater diversion and bunding, groundwater development, investigations into new recharge technology and new karez improvement techniques, and preparation of joint procedural Work Plans in conjunction with the water-related line agencies. Cessation of the physical works of the Water Sector in February 1990 prevented the achievement of any of this work. Instead, minor repairs to damaged dams and completion of already-approved projects were carried out.

d) Addressing the possibility of excessive groundwater depletion.

The extension of the electric power line from the new power plant at Pasni to Turbat and the planned connection of Panjgur to the Khuzdar grid threaten to accelerate the groundwater pumping rates in these areas. The additional pumping is likely to cause a dramatic drop in groundwater elevations, which can render obsolete the traditional karez-irrigation practice of the Division. As the Makran continues to develop, competing demands for water will increase. This will happen primarily around the urban centers of Turbat and Panjgur. Without regulation of the installation and pumping from wells, social upheaval over the use of groundwater is possible.

The Project proposed the formation of a Water Management Advisory Committee to advise the Commissioner of Makran on water issues. Through this committee, consisting of the four water-related agencies (Irrigation Department, Agricultural Engineering Department, On-Farm Water Management Department and Public Health Engineering Department) water-related line agencies in the Makran would cooperate to regulate development and use of water, to ensure equitable allocation of water rights, to settle disputes and conflicts, and to plan for the management of these resources.

b. Lessons Learned

Planning future uses and development of the scarce resources of groundwater in the Makran is indispensable. A reliable study of the existing resources, present annual withdrawals, and natural and artificial annual replenishment is critical in order to determine the balance available for further exploitation.

Assessing a safe yield is a major task requiring data on the geology, hydrology and meteorology of the area. Reliable information is currently not available. Data collection activities should be designed into any future programs for the Makran.

To avoid the problems that have arisen elsewhere in Balochistan when groundwater development has taken place, the capacity and recharge of this resource must be determined. To initiate this study, a hydrometeorological monitoring network must be established to gather data on rainfall and run off. The groundwater monitoring system outlined in the Karez and Well Inventory of the Makran also must be initiated. Data gathered from these two studies can be analyzed through computer modeling to predict the amount of replenishment. Planners can use this information in decision-making about development and regulation of groundwater.

A Master Plan for development of water resources in Coastal Makran should be developed, as described in the Planning section. Participation by the recipients in both the selection and implementation process is critical to the sustainability of infrastructure constructed.

Detailed sociological investigations of the proposed alignments of infiltration galleries must be undertaken prior to project design, since access rights for existing karezes and korjos are matters of intense local disputes.

c. Development Opportunities

Three major development opportunities have been identified in the area of water resources development: projects to divert runoff water into carefully designed bunded and leveled areas; the formation of the Makran Water Management Advisory Committee; and implementation of small water development activities involving beneficiary participation in their identification and construction.

1) Floodwater Diversion, Bunding and Land Leveling

Although the use of bunds to collect flood water is a concept well understood and used by Makrani farmers, they typically are made without any engineering input and therefore are very inefficient. The BALAD Project demonstrated how a carefully designed and constructed series of bunds could spread the water evenly over a large area on fifty acres of land near Surak village of the Bal Nigor area. The results of this spreading included bringing larger areas of land under agricultural production and increasing the amount of water infiltration in areas where it would normally be lost as run-off. If this work is combined with precision land leveling, efficiency of water use could be maximized.

Many nullahs are known to have annual flows due to the size of the catchments supplying them. This type of intervention in these nullahs would provide additional and relatively stable supplies of water for crop production.

The work required is primarily within the capacity of the Agricultural Engineering Department, as they are already responsible for bund construction. Design capability in the Agricultural Engineering department and On Farm Water Management's capacity to conduct precision land leveling are currently lacking. A future project could focus on these two institutions and support these types of programs.

2) **Formation of a Water Management Advisory Committee**

As discussed above, increasing and competing demands for water and the electrification of Turbat and Panjgur areas create a real danger of disrupting karez irrigation and causing tremendous technical and social problems. The need to support the formation of the WMAC cannot be over-emphasized. It is through this committee that carefully planned water resources development can occur.

3) **Undertaking Small Scale Water Development Projects with Significant Beneficiary Participation**

This concept falls in line with the development thinking of the Mission, as well as of many other donors. If NGOs aimed at local level participatory development become active in the Makran, the approach BALAD has initiated should be replicated.

3. AGRICULTURE

a. Analysis

- 1) Project Design, Implementation and the Effects of the Expatriate Evacuation and the Pressler Amendment

The agricultural related project activities were first outlined in the section on Planning, Management and Human Resources Development Component of the Project Paper (PP), grouped under "activities ... designed to improve the performance and effectiveness of human resources." They were to center around insuring the maximum economic benefits from the water elements of the project and included initiatives to improve the quality of agricultural skills and the level of support given to GOB Agricultural Officers. The PP specified "providing assistance to the extension service and On-Farm Water Management Directorates as these institutions are the ones responsible for helping farmers take better advantage of increased water supplies."

USAID delayed the mobilization of the Agronomist until later in the Project. Although the Agronomist position was to be for two years, a consultant was not mobilized until six months before the original LBII contract was scheduled to expire. Furthermore, the Agronomist was mobilized only after the Office of Agriculture and Rural Development (O/ARD) took over management responsibility for the Project.

Earlier mobilization of the Agronomist would have been beneficial, as changes in agricultural practices must be made over long growing seasons. There were immediate opportunities to implement programs focusing on water management and improving crop production practices before the Water Component implemented works. Also, an agronomist's work in an oasis could have paved the way for more farmer participation in the selection and implementation of Water Sector interventions.

In retrospect, however, the delay in implementing agricultural activities until O/ARD was managing the project gave the Agronomist a stronger support base in USAID. The modified scope of work developed for the Agronomist and the formal and informal guidance provided gave the Agronomist the flexibility to identify the real needs of the Makran and develop a work plan that focused on attainable objectives. Mobilization earlier in the Project when the emphasis was on infrastructure would undoubtedly have resulted in a vastly different agricultural program.

The decision to extend the project again through 1991, with an option for most of 1992 was made late in 1990. The Agronomist had developed programs aimed at creating the greatest impact possible

during his 14-month assignment. Had there been assurances of a longer running program, different approaches would have been included in the design of the program. Objectives and planned outputs for a single 31 to 46 month period would have been quite different than those developed. As it was, two separate programs, each with shorter term aims, had to be implemented.

The enforcement of the Pressler Amendment had only a minor short-term impact on the activities of the Agricultural Component, but a negative impact on its longer-term achievements. As the Project was terminated without the optional extension period, the overall strategy for agricultural development could not be fully implemented. While the BALAD TA team is confident some of the innovations introduced will be adopted by the farmers and will have significant beneficial effects (improved wheat varieties and grape vine pruning being the most significant), the larger picture of long-term, self-sustaining development may wither on the vine.

The loss of significant activity during two growing seasons caused by the Expatriate Team's evacuation between January and May of 1991, coupled with the loss of the PPMU Agronomist in February 1991, created a vacuum in leadership for the component. This resulted in significant lost opportunities to achieve many of the ambitious objectives set out in the December 1990 work plan.

2) Agricultural Strategy of the BALAD Project

All the Agricultural Component's activities aimed towards the highest level objective of increasing net farm income, pursuing two paths: increasing agricultural production and improving agricultural marketing.

For agricultural production to increase, farmers and herders must adopt new varieties, of plants and animals, and improve production techniques. At the same time, a reliable supply of the necessary agricultural inputs must be increased. These, then, became the main purposes of this component. Sub-purposes of the component included increasing the quantity and quality of locally processed dates, having one or more self-sustaining agricultural input stores operated by the private sector, and having the public and private organizations which support agriculture operate more effectively.

A number of public sector organizations have mandates to support the agricultural sector. These organizations and line agencies operate at varying degrees of effectiveness and certainly need strengthening. However, public institutions are not the only approach to provide sectoral support. A very important sub-purpose of this component was to identify and investigate alternative institutional approaches in hopes of determining the best mix of institutions to provide these services on a sustainable basis.

Unfortunately, there was not sufficient opportunity to carry out these investigations.

Certain technical activities contributed to the eventual development of an institutional approach for agricultural development. BALAD outputs in the following areas were designed to contribute to either better marketing or increased production: marketing improvements, training for date processors, support to agricultural Women in Development programs, and support to a private sector agricultural input store.

BALAD planned to work with seven types of institutions, including private date processors, agencies undertaking Women in Development programs, non-governmental organizations, a private agricultural input store, and three line agencies. The line agencies were Agricultural Extension, On-Farm Water Management and the Livestock Department.

The technical centerpiece of the Agricultural Component's strategy was the on-farm demonstration program. The on-farm demonstrations, conducted with the participation of Agricultural Extension, were developed to contribute to new varieties and practices being adopted by farmers and herders. There was no opportunity to develop a program with livestock, given the Project cutback. The time also ran out on creating a funding mechanism for the On-Farm Water Management Directorate. A draft Reimbursement Agreement (RA) was given to USAID, but it was not finalized between the two governments before the end of the Project.

The on-farm demonstrations were the vehicle by which the government line agencies tasked with supporting the agricultural sector could be strengthened. Through a program of phased institutional support, the line agencies' involvement in the demonstration programs would lead to the higher level objective of improved services being provided to farmers and herders by these agencies.

The scaling back of activities following the evacuation prevented the development of institutional support programs for the On-Farm Water Management and Livestock Departments. It also limited the amount of support the Project could give to Agricultural Extension.

Throughout the Project, Agricultural Extension showed only token interest in participating in BALAD activities. This forced the LBII Team to carry out many of its activities unilaterally, only informing the Agricultural Extension of what it was doing.

In spite of these restrictions, the on-farm demonstration program was successful at promoting the use of agricultural inputs such as improved seeds, fertilizers, plant protection measures, etc. By creating a demand for these inputs and encouraging local shops to provide a reliable supply of high quality products, the Project addressed the other part of the increased production formula:

increasing the availability of inputs. It was hoped that private sector suppliers of inputs could become a source of extension services to customers.

Though an agricultural supply store opened in Turbat, encouraged and supported by the Project, the abrupt cessation of BALAD agricultural activities reduces the chances of its sustainability, let alone any hope of it eventually assuming a larger role.

The successful implementation of the on-farm demonstration program gave the consultant and the Agricultural Research Institute (ARI) in Quetta the incentive to explore the possibility of initiating a date production based Farming Systems Research (FSR) program in the Makran. Although the cutbacks in the MART project by USAID and the time lost during the evacuation prevented the establishment of this program, this is one of the most important things needed to achieve significant agricultural development in the Makran. This program can still be initiated in the Makran if the government will make a commitment of resources. Information and experience that the Project has gathered can feed into the design of the program and initial products of the implementation of this program by ARI can result in significant improvements in production.

Outside of the on-farm demonstration program, but relating to both production and marketing, are activities which can benefit rural women through income generation from agricultural related activities. To help achieve this, the Project was to support programs undertaken by existing agencies in the Makran.

One program showing potential could still be implemented through the Farming Systems Research program. This program replicates, with appropriate modifications, the ongoing FSR poultry projects in the Northwest Frontier. This aspect of the Farming Systems Research program can be carried out if the government makes a commitment to it.

Even if a Farming Systems Research program is not implemented, other organizations, including NGOs, can use the FSR program as a model for implementing similar programs here. An outside agency, possibly an NGO, would be the most likely organization to implement such an activity. USAID currently has a Women in Development Specialist in the Makran looking at how programs can be implemented and identifying organizations to do so.

The marketing side was addressed in two ways. BALAD identified specific opportunities in crop marketing and would have implemented programs to exploit these opportunities had time allowed. Two detailed reports were produced on marketing of dates from the Makran and fruit from Panjgur. In addition, the Project supported the development of the local date processing industry.

One date processing factory opened and received technical assistance from the Project. This factory closed, however, amid a flurry of rumors and speculation as to the motives of its operators. Support given to this local date processor and the results of the study of date marketing opportunities in the Makran have, however, stimulated another entrepreneur to invest in a date processing factory in Turbat. The Project facilitated an arrangement between the owner and a private sector date processing/marketing consultant so the owner could receive advice on the setup and operation of the plant and marketing of the dates processed.

In more developed agro-industries in Pakistan, such as the sugar cane processing industry, extension work is carried out by the processor. It is in the processor's interest to see the best quality raw product coming into the factory. The potential for such extension is high in the date industry.

The date marketing study produced a recommendation and action plan for a Turbat-based date auction house. This auction would spur increased product quality and higher returns to growers, as farmers would be trading in a competitive market. The auction market could be a vehicle by which the date processors and exporters can provide certain training and technical assistance to farmers in the Makran.

All of these activities constitute what can best be termed a "institutional experiments" investigating a variety of approaches to support agriculture in the Makran. The results of these investigations could have led to an institutional approach mixing public and private organizations to most effectively support the needs of Makran's agricultural sector.

b. Lessons Learned

Introduction of change in the agricultural practices of remotely located farmers served by poor infrastructure is possible provided a "farmer first" approach is used. Farmers are receptive to innovative and improved ideas that address their real problems when introduced with their participation by people with a commitment to helping them improve their production.

Low cost agricultural development can be achieved through a well planned program focused on farm-based demonstrations. These demonstrations can serve to disseminate technology, train farmers, strengthen government extension service, and create a rapport between the farmers and extension agents.

Farmers need to have a personal stake in the development process. Demonstration programs should be held on farmer's land rather than on government farms. The demonstrations should include major contributions from the farmers of land, water and labor, while the

project should provide basic inputs such as seeds, fertilizer and ideas. The farmer should fully participate in the land preparation, sowing, application of treatments, etc.

Farmer training can be carried out very inexpensively. All that is required is expertise, often obtainable in Pakistan, local coordination, per diems for the training staff, and a minimal amount of supplies and equipment. The motivation to conduct and subsequent planning of such training is not so easily come by, however.

The most effective farmer field days utilized the farmers themselves as presenters of the demonstration results. Efforts made by the consultants to prepare the participant farmers to play this role are well worth the investment.

Farmers participating in a well organized on-farm demonstration program develop a "sense of community" through project efforts such as field days, study tours, etc. This should be encouraged and can be directed to reinforce agricultural change, increase the likelihood of sustainability of changes introduced and facilitate the spread of development ideas.

The Agricultural Extension service is largely ineffective as an agent of change in this area of Pakistan. Reform on all levels of the bureaucracy is necessary for significant improvement of the situation. Training of Agricultural Extension and On-Farm Water Management staff at the local level may increase certain skills, but there is little hope these skills will be put to use unless and until major changes in the entire system of Agricultural Extension take place.

The participation of a highly qualified and, more important, highly motivated and dedicated local counterpart can increase effectiveness of Expatriate Technical Assistance by orders of magnitude.

Accelerating the improvement of agricultural production in oasis areas is an extremely complex undertaking. The production systems used in these areas, based primarily on traditional practices, are often considered unproductive or obsolete. Yet there is considerable value in the generations of experience that have led to these systems. Farmers employ a complex mixed cropping system of fruit, fodder, grains and vegetables. Rational recommendations for crop improvement leading to increases in overall farm income requires sustained research, not only on single crop factors, but also on the interrelationship of crops found on any one property. This information can only be derived from a systems approach to farm research.

There is high quality local (in country) expertise available, though often hard to find. The best of this expertise is to be found in the private sector. Networking should be employed to locate this expertise and it should be utilized as much as possible.

c. Development Opportunities

1) Date Auction House in Turbat

A major study conducted by the project in 1991 identifies the need for a date auction market to be established in Turbat.¹⁶ The establishment of an auction market would be the intervention which would have the greatest impact on the income of Makran date growers.

This market would be the property of both buyers and sellers, in which professional auctioneers introduce orderly marketing by bringing the buyers and sellers together at central site in the Makran. This project would be virtually self financing with a high benefit/cost ratio. Benefits extend beyond just increased income for dates. It can stimulate farmers to produce more dates at higher quality; it can serve as a vehicle by which extension services can be provided to the date growers; and it can stimulate new enterprise develop in Turbat.

The date marketing study examines the feasibility, costs and benefits, and outlines an operational program by which this auction market can be established. This concept has the support of both growers groups in the Makran and the date export firms in the Sind. What is needed is the catalyst to bring the two together.

2) Crop Production

Introduction of Fig Cultivation in Panjgur District should be a high priority of any agricultural development program implemented in the region. The market demand, local and international, and the flexibility afforded by a fruit that can be sold either fresh or processed, make the expansion of fig cultivation an attractive prospect. This is a long-term activity, however, in that fig cultivation is not practiced to any significant degree in the Makran and that there is little institutional research supporting fig culture.

¹⁶ M.M. Irani and F.G. Masson, Marketing of Makran Dates, BALAD Report, October 1991.

3) Training

USAID could support further training in the Makran through other projects. Potential training programs which can have a very positive impact on the agricultural sector of the Makran come to mind. Two of these programs are easily implementable at very low cost, using local resources and in-country expertise.

1. Additional training of farmers in Panjgur in grape vine pruning. This follows on to training already provided by BALAD in the winter of 1990, and should occur in early February. Many farmers have become aware of the beneficial effects of this practice and wish to use it on their vines. Training in how to do this is a felt need of the area. Expertise in this exists at ARI, in Quetta. All that is needed to impart this training, is to arrange logistical support for the effort, in that government does not have the resources to carry it out. This support would be in the form of transportation for the specialist, lodging and per diem at the rest-house in Panjgur and local coordination to contact and gather farmers, locate a farm where the training can take place and arrange for refreshments. Other costs would include the purchase of pruning shears for the farmers to use in the demonstrations and be allowed to keep afterwards.

2. In the spring, for only a modest cost, grape vine grafting and rooting techniques could also be taught. This training require another specialist from ARI and additional equipment (i.e., grafting knives for the farmers) and scions of the local and imported grape varieties grown in Quetta. In addition to teaching the grafting and rooting techniques, this program would introduce improved varieties of seedless and other grapes on a small scale for farmers to evaluate. If farmers wish to adopt these varieties, they will then have the skills to carry out further grafting, and contact with the research program in Quetta where they can obtain the improved stock.

These programs entail only modest costs and utilize local expertise; they are more fully discussed in the "Action Plan" section of the BALAD report on marketing of Panjgur fruit.¹⁷

A more ambitious training opportunity, requiring a greater investment but with potentially even greater impact, is the training of farmers in the thinning of date bunches and improved pollination methods. This program would require an expatriate

¹⁷ K.A. Siddiqi and F.G. Masson, Marketing of Panjgur Fruits, BALAD Report, November 1991, pp 43-44.

specialist with a date growing background. Such specialists are available in the southern desert date growing areas of California, and some have experience in this type of international training.¹⁸

Water management training is a longer term program. Effective training in water management will first require establishing demonstrations based solely on water application. Moisture monitoring devices need to be installed and irrigation applied when indicated by the soil moisture levels. Farmers are likely to show reluctance at changing their traditional methods of irrigation, particularly date growers. Whoever is doing the demonstrations will have to gain the growers confidence or guarantee payment of reparation for lost or damaged crops. A carefully designed program should not cause any loss but rather would result in the same yields at less water cost.

4) Implementation of Farming Systems Research

The Farming Systems Research approach is ideally suited for the Makran. Basic research on oasis farming systems is needed. From a research standpoint the systems are small enough to conduct detailed research effectively and efficiently. The research done in one oasis can be applied throughout the other oases in the area. Furthermore, farmers in the Makran should be receptive.

¹⁸ See the report by B. Millikan and D. Adair, Date Improvement Project for the Tahama of Yemen, July 1990. This report was placed in the PPMU library by the Agronomist upon his departure.

4. SPECIAL DEVELOPMENT ACTIVITIES

a. Analysis

Special Development Activities (SDA) were designed to rapidly respond to special needs identified at the local level which did not fit into other BALAD components but warranted attention. Examples listed in the Project Paper included schools, health facilities, housing for teachers or health workers and, interestingly enough, the initial phase of a comprehensive plan for water resources development. The activities were to be chosen at the local level and, other than studies, would not begin until other sectoral activities were underway.

The activities carried out under SDA consisted almost entirely of building additional primary school classrooms. SDA construction works were certainly among the most well received of all construction activities. Indeed, as the 1990 evaluation of the Project noted: "The fact that this activity offers immediate tangible accomplishment has served to maintain BALAD's image and credibility."¹⁹

Fifty-two school buildings, widely scattered throughout the Makran, and one maternity home in the Panjgur district were constructed. The first phase of Turbat town road paving was initiated as an Special Development Activity.

Whether the construction of school buildings has had an impact on the number of children educated could not be determined empirically, but it can be assumed that improved facilities have a positive impact on the quality of education. The maternity center in Panjgur never opened due to the lack of a lady doctor in the area.

The 1990 evaluation of BALAD recommended that the funds allocated for SDA be placed under the control of the DCC or DWC who would be responsible for identifying projects. These would then be implemented by the line agencies and require community participation as a condition for project approval.²⁰

As discussed above in the Water Sector assessment, the project identification process as it existed was, by nature, a political one. Political motivations often overshadowed real development needs. The BALAD team tried its best to minimize the impacts of this, but in certain cases, such as the maternity health center, the facilities provided have never been used. This points out that there was something wrong with the system of selection. Therefore,

¹⁹ Development Alternatives, op. cit., p 69.

²⁰ Ibid, p. xv.

it would be difficult for the TA Team to support placing development funds in the hands of this political process. It may be advisable to use such funds to finance works carried out by NGOs initiating local level self-help programs. These NGOs, however, should be monitored by the agency funding the program or there is a chance that participating NGOs, too, could be manipulated by political agendas.

b. Lessons Learned

The inclusion of this activity in the Project design was valuable in overcoming the initial resistance to the foreign presence in the Makran. This factor alone would justify inclusion of this type of program in projects implemented under similar circumstances.

BALAD, under pressure to produce physical outputs, focused these activities almost entirely on the construction of school buildings and therefore did not really explore the dynamic potential of the funds.

Construction projects undertaken in very remote villages are hard to monitor and supervise. Because of the remoteness, contractors often expect that the quality of their work will be overlooked. Rigorous oversight is important, and the will to reject sub-standard work a necessity.

In the contractor selection process, contractors that come from the villages where the work is being done are less likely to do sub-standard work. For the small amount of money they can save by doing inferior work, they risk hurting their local reputation. This factor should be considered in the selection criteria of the contract award process.

Lessons drawn from the two Water Sector local participation programs can apply to the SDA funds. Community participation in project selection and implementation is invaluable. If the community feels ownership, they have a vested interest in the quality; they are the ones who will live with the end product. The TA Team feels that better construction and maintenance of the structures would be achieved with local participation.

c. Development Opportunities

The SDA funding process offers a flexible and far reaching method for achieving development. It can be provide infrastructure development; it can work to strengthen certain planning and development organizations; it can be channeled through NGOs to achieve community level development.

If properly designed and vigorously implemented as a component in any regional or area development project, it can be the vehicle whereby grassroots needs can be rapidly and effectively addressed.

5. PLANNING

a. Analysis

1. Planning Studies

Limited sectoral planning and even less regional planning had taken place in the Makran before BALAD. BALAD partially filled the lack of basic data through planning publications and sectoral studies. Much of the Project's planning work was directly related to decisions that GOB officials and others need to make about the Makran's development, for example:

- o The Road Counts and Condition Surveys help decision-makers establish priorities for road construction and maintenance.
- o The Well and Karez Inventories provided basic data for monitoring groundwater levels which could help decision-makers regulate water use and avoid rapid drawdowns of the water table from the proliferation of tubewells.
- o The BALAD-sponsored Electro-Resistivity Study for the Gwadar District should help decision-makers plan where to bore for water.
- o The Fisheries Study identified the possibility of unexploited large pelagic (e.g., tuna) fisheries off the Makran Coast, which should help public and private decision-makers who wish to expand Makran's fishing industry.

In short, data collection and analysis should concentrate on types of data that will affect decision-making.

The needs of the people of the Makran are many and the resources of the GOB few. A regional plan embraces many sectors and many human needs, permitting alternative solutions to be examined within one framework. This was illustrated in BALAD by the Regional Plan for Coastal Makran. Regional planning for the Makran is needed to integrate and to help establish development priorities.

"Economic Base Analysis" is a useful regional planning methodology in the Makran and in Coastal Makran in particular. In this analysis economic growth depends on a region exporting goods and services, which in turn generates demands for the nonbasic sectors. The Regional Plan for Coastal Makran illustrated the suitability of this methodology for a region which has few natural resources and is highly dependent already on a few exports, especially fish.

For Coastal Makran, high priority needs to be given to supporting the growth of the fishing industry. The industry has potential for expansion and generates income for the Gwadar District by exporting 90 % of the catch to the rest of Pakistan and to other countries.

For Coastal Makran, a Master Plan for the Management of Water Resources is urgently needed, especially for the greater Gwadar area. There are a multitude of schemes at various stages of design and implementation to supply water to this desperately water short region. The Gwadar Fish Harbor, now nearing completion, will require 150,000 gallons per day when fully operational; and that supply is presently unavailable.

For Coastal Makran, when health and education needs are assessed, it is important to identify specific problems that affect the production of exports (fish, for example) and activities that support those exports. A Manpower Survey is needed, for example, to determine how and to what extent illiteracy and lack of specific skills in the labor force are impeding regional exports.

For Coastal Makran, the Agriculture and Livestock sector should be given low priority for the investment of discretionary development funds. Part of setting priorities is identification of lower priority activities. The region can readily import food from the rest of the Makran and from elsewhere. With perhaps a few exceptions, the high cost of providing irrigation water puts the region at a comparative disadvantage for agriculture and livestock.

2) Institutionalization of Regional Planning

The Government of Balochistan has over the years provided minimal budgetary and staff support to the PPMU, probably because of a lack of high level commitment by political leaders and senior administrators.

BALAD has provided training, office space, and computer hardware and software to the PPMU. This agency has used those capabilities well to carry out major BALAD construction contracting responsibilities. The PPMU also assisted BALAD's implementation in agriculture and, to a lesser extent, in planning. Overall the PPMU, as a planning unit, remains at any early stage of development. More collaboration among the PPMU, P & D in Quetta, USAID, and the technical assistance team could have led to a high degree of PPMU's capability at the end of the project. Institutional development takes time and much cooperative interaction, both formal and informal.

In the last months of 1991 BALAD conducted a study concerning planning in the Makran and a related Planning Conference, held in

Quetta on October 8. The study provided the lessons learned and development opportunities for institutionalization of regional planning.

b. Lessons Learned

1) Planning Studies

For the Makran and perhaps for other parts of Balochistan, regional planning is a practical tool to help the Government and others evaluate and compare interventions. Proper use of regional plans would afford the Government an opportunity to maximize the impacts of its expenditures, particularly those in the Annual Development Plans.

BALAD's planning work was directly related to decisions that GOB officials and others need to make about the Makran's development. Data collection and analysis should concentrate on types of data that will affect decision-making.

Regional planning for the Makran is needed to establish and integrate development priorities.

High priority needs to be given to supporting the growth of the fishing industry in Coastal Makran. A Master Plan for the Management of Water Resources is urgently needed, especially for the greater Gwadar area.

For Coastal Makran, a Manpower Survey is needed to determine to what extent illiteracy and lack of specific skills in the labor force are impeding regional exports. The Agriculture and Livestock sector should be given low priority for the investment of discretionary development funds.

2) Institutionalization of Regional Planning

The Government of Balochistan has over the years provided minimal budgetary and staff support to the PPMU, probably because of a lack of high level commitment by political leaders and senior administrators. BALAD provided various kinds of support to PPMU over the years.

PPMU, as a planning unit, remains at any early stage of development. Institutional development requires cooperative interaction, both formal and informal.

The BALAD study, Planning in the Makran²¹, provided lessons learned and development opportunities for institutionalization of regional planning. The critical ingredients for the institutionalization of regional planning in the Makran are discussed below:

a) Policy Commitment

GOP is moving towards decentralized regional planning. Implementing this policy in the Makran will require an agreed upon framework, institution building, line agency integration and local accountability, and more local control of resources.

b) Leadership

The quality of administrative officials is high. However, decentralized regional planning requires human resources, including a full time, senior planner who can mobilize line agencies and private entities, and represent divisional interests in provincial and federal forums.

c) Planning Unit

The GOB has taken the first step in the institutionalization of planning by establishing a Directorate for Development. However, this office currently performs only minimal monitoring functions. Its capabilities should be expanded to carry out broader planning functions.

The PPMU which could be integrated into this office, and BALAD equipment (such as computers, vehicles, and office space) could be designated to support this unit. Training and periodic technical assistance will be required.

d) Data Collection & Analysis System

Most line agencies collect raw data, but are not structured to do the necessary analyses for planning. With restructuring and some training, existing personnel can be used.

BALAD has developed specific data bases (e.g. roads, water systems, Gwadar District planning) that provide a starting point for building a divisional system. This process could be facilitated by upgrading and expanding existing computer capabilities.

²¹ C. Sweet, Y. Bajwa, Planning in the Makran, a Study of the Policy, Institutional and Process Requirements of Effective Decision Making, BALAD Report, December 1991.

e) Line Agency Integration

Line agencies are not conducting integrated planning. Nor are the mechanisms in place to increase coordination (with the suspension of the Divisional and District Development Committees) and accountability. Further, planning capabilities are weak.

f) "Stakeholder" Involvement

Popular participation in planning is institutionalized through the local council system. However, literacy is low, and little is understood about the local planning and development process so few local resources are invested. Adult education and intensive community development work are required to increase local decision making capabilities.

The MPAs and MNAs represent local interests but act frequently out of political interests rather than sound planning principles.

Private sector organizations are almost non-existent which will be an important missing voice in the process until developed.

g) Government Decision Making Linkages

Within the current system, information flows tend to be top-down, with little dialogue on development priorities. If a decentralized planning system is developed, there will be a need for two way dialogue and greater and more systematic information sharing.

c. Development Opportunities

1) Planning Studies

For Coastal Makran, the fishing industry is capable of further expansion both in terms of catch and value-added. The potential catch appears particularly great for the large pelagic fish, such as tuna. Additional facilities for storage and processing of fish would permit more revenues from a given catch to be received as income by the region's residents.

For Coastal Makran, preparing and implementing a Master Plan for the Development of Water Resources will support the growth of regional exports of fish and thereby the region's economy, and will help to meet immediate human needs.

For Coastal Makran, the proposed Manpower Survey will identify solutions to labor skill barriers to the region's economic development.

2) Institutionalization of Regional Planning

The PPMU and the BALAD compound represent human and infrastructure assets that could be built upon to establish a Makran Planning and Development Unit. The Unit would carry out planning activities, including the identification of investment opportunities, and could actively promote those investments from Pakistani and foreign public and private sources.

The challenge is to build an effective planning system for the Makran which would generate broad participation and be responsive to budgetary cycles, targets of financial opportunity, and changing circumstances. Properly designed and implemented, strengthened planning capabilities can lead to more cost effective and sustainable development in the Makran.

In order to institutionalize regional planning, the following recommendations should be implemented.

a) Strategy for Planning System Development

Initial focus could be concentrated on tactical (short-term) planning, with the skills and institutional capabilities--both governmental and private sector expanded gradually to carry out strategic (longer-term) planning. The development of this system should include time-phased targets so progress towards strengthening the planning system can be measured.

b) Makran as a Prototype for Regional Planning at the Divisional Level

The benefits of decentralized regional planning, especially for lagging areas like Makran, have been examined. Moreover, developing these capabilities will take time and testing, requiring a strong, policy commitment to this process. It is proposed that Makran Division be designated as a prototype for testing and developing this model, with the possibility for adoption in the other divisions of Balochistan Province.

c) Planning Unit Development

A strong planning unit is critical if effective regional planning is to take place. GOB/P&D has established the Director of Development office. BALAD has developed similar capabilities through its PPMU and the LBII local staff. These elements may be integrated into the Division's planning unit, supported in part by the BALLAD resources transferred to the government; in addition, training and periodic technical assistance will be needed.

Several organizational alternatives were examined for the planning unit, including private sector, NGO, development authority, and free trade zone models. On the basis of this analysis, it is recommended that the planning unit be developed as part of the divisional administration. This would require an expansion of the terms of reference for the Director of Development to include strategic and tactical planning. The initial concentration should be on project formulation and assessment for the annual development plan, and the planning and management of foreign assistance projects. On an evolutionary basis, as capabilities develop, attention could turn towards regional analyses for strategic planning.

d) Initial Planning Priorities

With the recommended focus of the proposed planning unit, there are several priorities for initial implementation. These include: 1) improving and automating the data collection and analysis system which is a "must" for effective planning, 2) improving project formulation; 3) upgrading the project monitoring system; and 4) the initiation of project evaluations. These are activities which can be immediately carried out, using existing in-country capabilities from the government, academic, and consulting sectors.

The current data collection systems of the line agencies be assessed to improve content (i.e. analyses and end uses), methodology, and integration into the P&D Department's expanding information system.

A training program for line agency personnel in project identification, formulation, and appraisal should be developed.

The Division's monitoring system (beyond physical and financial progress indicators) to include the tracking of inputs, outputs, and initial effects (for improved performance) should be upgraded.

e) Increasing "Stakeholder" Involvement

Public participation in the planning process is critical for its success, especially if dynamic regional growth is to take place. As noted earlier, local level, private institutions are almost non-existent, except for the system of local councils. There appear to be two priorities in developing these initial capabilities. The first is to organize the businessmen and entrepreneurs so their inputs are considered in the planning process. The second is to increase village and local council decision making capabilities, perhaps through a combined adult education and community development program carried out by a NGO. In addition, there is a need to test various formal and informal mechanisms for increasing public participation in the planning process.

The mechanisms and institutional capabilities for increasing public participation in the planning process should be developed.

A Chamber of Agriculture at the Makran level should be organized to advance the interests of the agricultural community in the integrated regional planning process.

A Chamber of a Commerce and Industries for the Makran should be established to develop appropriate agro-based industries. Eventually a free trade zone/export processing zone should be considered.

The Social Services Department should be given responsibility for organizing an adult education and community development society (to be registered as an NGO), comprising public spirited and well educated men and women, with planning and operational assistance of domestic and international NGOs.

B. MANAGEMENT OF CONSTRUCTION

1. Analysis

The analysis of BALAD's management of construction is treated in two sub-sections: (1) contracts with Fixed Amount Contractors, and (2) the special Force Account Arrangement with the GOB Communications and Works Department (C&W).

Table 6 presents a list of private sector contractors who worked on BALAD sub-projects in roads, water and SDA.

a. Fixed Amount Contracts

The Construction Section of the BALAD Project was established under Head Construction Engineer M. Ali Baloch in late 1986. Construction continued into December 1991. The section supervised the construction by private contractors of road and water projects designed by the TA team, to ensure quality control to a high standard. It also supervised the construction of schools and the maternity clinic in Panjgur under the SDA component of the Project.

Of interest to USAID was ensuring that its funds were properly spent on construction. The PPMU, an arm of P & D with offices on the BALAD compound in Turbat, tendered the fixed amounts contracts, received USAID funds (through GOB channels), and paid the construction contractors. USAID relied heavily on the LBII TA Team's written advice on construction progress. Before USAID would either give initial approval to a construction budget or reimburse the PPMU for its expenses, USAID would require a written recommendation to that effect from LBII. At the end of a construction contract, LBII would issue the Certificate of Completion which USAID required prior to making final settlements.

A third objective in the management of construction was to increase the capability of local contractors. The Project utilized the Unit Rate System of Bidding, instead of the customary single lump sum or percentage system. The new system demanded better quality bids and provided more accountability during implementation.

Overall, the strict construction supervision provided by LBII resulted in a much higher standard of construction than would otherwise have been the case. At times the LBII engineers and supervisors in effect provided technical assistance to private contractors.

The USAID/LBII/PPMU/Construction Contractor financial chain created considerable paperwork, which at times resulted in delays. LBII's oversight helped ensure that funds were properly spent. If USAID

TABLE 6

LOCAL CONTRACTORS USED ON BALAD SUB PROJECTS
LISTED BY PROJECT SECTOR

ROAD SECTOR

1. Imam Ali
2. Mohammad Murad
3. Mir Ahmed Khan
4. Ata Mohammad
5. M. Yousaf Bras
6. Khalid Baloch
7. Ghulam Mohd. Gochki
8. Mehrab Khan
9. Barkat Ali
10. Abdul Karim
11. Mehmood

WATER SECTOR

1. Sabir Ali
2. Ata Mohammad
3. Barkat Ali
4. Guljan
5. Akhtar Ali
6. Mohammad Jan
7. Dur Mohammad
8. Abdul Razaq
9. Khalid Baloch
10. Naseeruddin
11. Mohammad Murad
12. Mir Ahmed Khan
13. Naseem
14. Mohammad Hamza
15. Rasool Buksh
16. Irshad Ahmed
17. M/S Drill Tech
18. Munir Ahmed
19. Mohammad Ismail
20. Behram
21. Agha Ghulam Hussain
22. Mohammad Saddiq
23. Waris
24. Dad Mohammad
25. Abdul Samad
26. Aba Bakkar
27. Mohammad Ali
28. Hazoor Buksh

SCHOOL CONSTRUCTION

1. Rafiq Ahmed
2. Mohammad Hussain
3. Gul Mohammad
4. Ata Mohammad
5. Mohammad Ismail
6. Ghulam Mohammad
7. Akhtar Ali
8. Sabir Ali
9. Rasool Buksh
10. Mohammad Jan
11. Faqir Mohammad
12. Khalid Baloch
13. Din Mohammad
14. Aba Bakkar
15. Behram
16. Naseeruddin
17. Abdul Samad
18. Nazir Ahmed
19. Fazal Mohammad
20. Mohammad Anwar
21. Mohammad Murad
22. Dur Mohammad

had turned the funds over to the GOB without LBII's financial and technical supervision, there could have been much lower quality construction to show for the monies spent.

Progress was made in upgrading the capabilities of the private contractors. Over the years their performance on BALAD work improved and they learned how to utilize the Unit Rate System of Bidding. The local contractors have remained fairly small in size and have not made major expansion in terms of their ownership of vehicles and equipment. This partly reflects the arrangement often used whereby equipment is leased from C & W. Their limited growth is due also to the limited demand for their services in the remote, and economically small Makran.

b. Force Account with C & W

The Force Account mechanism was used with C&W for jobs for which the exact quantities could not be estimated ahead of time. This arrangement was used for road rehabilitation and maintenance and for the emergency repairs to the Kech River Bridge.

The Force Account arrangement did have advantages. It allowed for timely implementation, and it enabled BALAD to maintain significant financial and technical control.

A case in point was the urgent need for repairs to the Kech River Bridge. On July 3, 1991, the Project Officer requested that BALAD undertake emergency repairs to the bridge, which had been damaged by a major flood in February. The Mission's Office of Engineering had encountered delays in contracting for the permanent repairs and the monsoon season loomed. Through the Force Account mechanism, BALAD promptly did the necessary survey work and designed the emergency repairs. The work consisted of stone work underneath the secondary bridge, channelization below the secondary bridge and the five culverts, and repairs to one of the culverts.

The Force Account approach avoided the lengthy tendering process required for Fixed Amount Contracts. Physical work on the Kech River Bridge began on July 20 and was completed on August 24, illustrating the effectiveness of USAID/LBII/PPMU/C & W technical and contractual coordination under the Force Account system.

2. Lessons Learned

a. General

It proved useful to the TA Team to have a separate Construction Supervision Section. However, coordination with the Engineering Design Section was critical at certain points to ensure compliance

with the original design or to make sure any field modifications necessary were satisfactory.

Given leakages of various sorts in the GOB contracting arrangements, it was advantageous for USAID to maintain financial oversight with the assistance of LBII. Such oversight was exercised under both the Fixed Amount and the Force Account types of contracts.

Under both types of contracts, it was useful to have the TA Team provide construction supervision and, often as it worked out, technical direction. This resulted in a much better quality of work than would otherwise have been the case.

b. Fixed Amount Contracts

The following are lessons learned from our experience with Fixed Amount contracts in the Makran on water and SDA projects:

- Progress was made in upgrading the capabilities of the private contractors. Over the years their performance on BALAD work improved and they learned how to utilize the Unit Rate System of Bidding. Local contractors remained fairly small, but some of the contractors who started off with BALAD are now bidding for bigger contracts with other agencies.
- The GOB Composite Schedule of Rates (CSR) suggested unit prices for contracts that were too low, given the high standard of quality we were asking from the contractors.
- The quality of construction work should not be compromised; that is one of the benefits that BALAD brought to the Makran.
- It is important in the Makran for the BALAD design engineers and construction supervisors to work closely with the local people. Local input is very useful when the behavior of a river or nullah water flow is a design factor. On occasion BALAD had to abandon a project or make design changes during construction in part because local information was not utilized early in the design phase.
- Project design should be done keeping in view the local availability of the particular labor force skills. Similarly, the availability of construction materials specified in the tender documents should be kept in mind. When such problems were present in the tender documents, potential bidders were discouraged from submitting bids.
- Project designs should be as simple as possible so they can be understood by local people and farmers, and replicated by them in the future.

- When working with the local contractors, it is important to consider their point of view. Most of them are respected citizens living in the Makran. The TA Team should convey its views clearly but politely.
- In the contractor selection process, contractors that come from the villages where work is being done should be considered favorably in the selection and contract award process.
- Local people and farmers are used to traditional and well-established ways of tackling their engineering problems. Before introducing any new technology or method, it was important for BALAD to be sure of the innovation. Groundwork must be laid to convince the local people of the advantages of new technologies before introducing them.

c. Force Account with C & W

- The Force Account arrangement permitted BALAD to contract rapidly for road work when the fixed quantities could not readily be estimated. The Force Account arrangement was effective, and it enabled BALAD to maintain significant financial and technical control.

C. TRAINING

1. Analysis

a. Training Approaches

Shortages of qualified personnel from the Makran who could implement BALAD were a major constraint. There are several alternative ways to cope with such constraints: making training an important project component; simplifying the nature of activities to be undertaken in line with local capabilities; not initiating the planned project; or using foreign technical assistance. Two of these alternatives were not possible, as BALAD had already been initiated, and project activities were not simplified. On the other hand, training became a major, if uneven, BALAD component, as described below, and foreign advisers were used to perform project activities.

b. Overseas Vocational Training

Overseas Vocational Training was not in the original project design, but was added in November 1986 in response to criticism from Makranis, especially from the Balochistan Students Organization, that the Project was not providing benefits to the area. Over the next two years, 45 Makranis received training in the U.S.: 37 in two-year certificate programs and 8 in non-degree technical programs. The program cost about \$ 1.5 million, or about \$33,333 per student.

The program was popular at first, but after their return from the U.S., the trainees have had continuing difficulties finding work. Even the two-year certificate did not make them eligible by civil service rules for professional level positions with the Government of Balochistan, a major employer in the Makran, although GOB officials had promised them such jobs. Many remain unemployed. Because the students had participated in this program, they became ineligible for another Balochistan-wide fellowship program sponsored by USAID.

The November 1990 BALAD Evaluation concluded that "there is little positive that can be said at this time regarding the long-term value and sustainability of this training."²²

²² Development Alternatives, Inc., pp. 35-36.

c. In Country Training

The training provided to C & W equipment operators and to maintenance staff for daily maintenance of equipment has been beneficial. In spite of substantial donations of equipment and significant training, C & W's overall effectiveness as an organization is largely unchanged. Management training and institutional reform would be needed to make C & W into a highly efficient highway department.

The training provided to farmers through the On Farm Demonstrations was worthwhile. Early indications are that many farmers in subsequent growing seasons have adopted the practices and varieties which had been successfully demonstrated and on which information was disseminated. Agricultural Extension agents benefitted from their participation in BALAD agricultural activities.

d. On-the-Job Training

Long- and short-term expatriate specialists imparted some of their skills to Pakistani counterparts through on-the-job training. Much of that training, however, occurred within the LBII team. Less on-the-job training could take place with senior staff in the line agencies (C & W; Agricultural Extension; On Farm Water Management; Irrigation; and P & D, including the PPMU).

e. Training in the Evolution of BALAD

Like other institutional aspects of BALAD, training (except the Vocational Overseas Training) was de-emphasized in the early years as the Project concentrated on physical accomplishments that would build credibility with the local population. In the Transition and Integrated Rural Development Phases, there was a renewed emphasis on training.

Training Specialist Sterling Hayden, a short-term consultant to BALAD in Summer 1990, developed a comprehensive Training Program, significant elements of which were incorporated in the December 1990 Work Plan. By the end of 1990, BALAD had numerous training objectives and nine line agencies to strengthen, although some were more important to BALAD than others. Training became spread out in the December 1990 Work Plan over many sectors and types of trainees, including farmers.

Since that Work Plan was so short-lived, it is difficult to judge whether the anticipated technical assistance, training, and equipment provision, slated to be delivered through September 1992, would have significantly improved staff performance and thereby have had a marked impact on the performance of the various GOB agencies. On balance, we think not, given the other serious

obstacles to public sector efficiency in Balochistan. Better results may have been achieved in the Transition and Integrated Rural Development phases of BALAD if the Work Plan had included fewer institutional objectives and allowed for a more focussed training program.

2. Lessons Learned

a. Overseas Vocational Training

BALAD's Overseas Vocational Training in the U.S., an initially popular response to a political problem, is (so far, at least) a development failure. Contrary to what they had been told, the 45 trainees have, with few exceptions, been unable to obtain professional positions with the GOB nor other positions in which their new skills could assist in the development of the Makran.

Although we view this training with the wisdom of hindsight, a prudent and street-wise analysis should have anticipated some of the problems. A critical logical Framework exercise on the overseas training of Makranis should have revealed the dubious assumptions that underlay their (purpose level) projected contribution to the Makran's development.

From a development viewpoint, the \$1.5 million spent on the Overseas Vocational Training has borne little fruit to date. Perhaps a few trainees could have been sent to the U.S. for training on a highly selective basis with guaranteed jobs awaiting their return.

b. In Country Training

In Country* Training was generally successful. Farmers, equipment operators and equipment maintenance staff of C & W, and others received useful training from BALAD. The training of line agency personnel, however, did not significantly increase the effectiveness of those agencies. Other kinds of training, as well as various other changes (more incentives and better accountability, for example), would be needed to make a marked impact on the performance of line agencies.

Farmer training can be carried out inexpensively. All that is required is expertise, often obtainable in Pakistan, local coordination, per diems for training staff, and a minimal amount of supplies and equipment. Less easily attained is the motivation to plan and conduct the training.

c. On-the-Job Training

BALAD long- and short-term expatriate specialists and managers filled the expertise gaps to enable important project objectives to be achieved much sooner than otherwise. The foreign advisers, through on-the-job training, imparted their skills to Pakistani BALAD counterparts, and to a lesser extent, to line agency personnel.

d. Training in the Evolution of BALAD

Training was de-emphasized in the early years, as the Project concentrated on physical accomplishments that would build credibility with the local population. By the end of 1990, BALAD had nine line agencies to strengthen, although some were more important to BALAD than others. Training became spread out in the December 1990 Work Plan over many sectors and types of trainees, including the farmers.

In the Transition and Integrated Rural Development phases of BALAD, fewer institutional objectives would have permitted a more focussed training program as one component of a fully integrated program to attain improved performance for a few selected, targeted agencies.

3. Development Opportunities

The 45 Makranis who received overseas vocational training represent an unexploited potential to contribute to the development of the Makran and Pakistan. The following steps are recommended to tap this resource:

- The Government of Pakistan and the Government of Balochistan should eliminate the administrative barriers to their employment, when the actual education received would technically qualify them for professional posts. USAID should continue to encourage the Governments to take such steps.
- USAID should allow the returned Makranis to participate in other scholarship programs which would benefit them and lead potentially both to gainful employment and improved human resources utilization.

An overall approach to training for C & W in the Makran is contained in the Road Sector Work Program prepared by the Road Section of the LBII Team in early 1991. Training could be provided to C & W personnel in equipment maintenance and repair; maintenance, repair of engines and chassis, and equipment testing; and spare parts inventory control.

USAID could support further training in the Makran through other projects. Certain training can be contracted out to local specialists, as was done for Grape Pruning Training in Panjgur by BALAD. In fact, this training course should be repeated this winter.

Training of farmers in Date Pollenation and Bunch Thinning has the potential for greatly increasing date yields in the Makran. This training, however, is more difficult to organize at present in that it requires an expatriate specialist. This specialist should be a date farmer, rather than an academic. Such specialists are available in the southern desert date-growing areas of California.

The GOB, international donors, and others interested in the development of the Makran, should consider the numerous and detailed training recommendations contained in the BALAD Training Program Report.

D. PROJECT DESIGN

1. Analysis

a. Differing High Level Objectives

The Government of Balochistan and USAID differed at times over two principal types of objectives: political and development. Early in the Project, local political opposition to BALAD caused greater emphasis to be placed on physical outputs which were visible to the local people. The political process played a notable role in the school construction program and in some of the karez and korjo improvements. USAID spent \$ 1.5 million to send 45 Makranis to the U.S. for a year or two of vocational training, with little development impact so far.

In early 1991, the application of the Pressler Amendment by USAID hit BALAD hard. The anticipated extension of the PACD beyond December 1991 was scrapped and funds were de-obligated. The Government of Balochistan would have liked BALAD to continue, and did not favor the de-obligation of U.S. funds from the Project.

Obviously, many political issues are well beyond the ambit of a project like BALAD. But participants who require decisions at the project level merit joint discussion, consideration, and action by the two governments. More bilateral dialogue would probably have provided greater clarity to the Project and resulted in more agreement between the governments. Examples of decisions that could have been so affected are those early in the Project concerning how to reduce local political opposition, and the later decisions about how to spend obligated funds.

b. Major Developmental Trade-Offs

"Area Development" projects can mean many different things. At one extreme, such projects can be focussed narrowly on major roads that open up an area, with perhaps some attention given to strengthening institutional capability to maintain these roads. At the other extreme, anything anybody can label as "development" and implement in a given area can be labelled an area development program. "Integrated rural development" is between those extremes. BALAD at different times was at different places along that spectrum. The discussion below on the rigor of the BALAD Project's various designs will provide more detail.

BALAD has been neither fish nor fowl. It has been many things and often too many things. The tendency in Project design was to add elements; it would have been helpful at times for BALAD's decision-makers simply to have decided that certain items were not within BALAD's purview.

BALAD faced three major developmental trade-offs:

- Infrastructure Construction vs. Integrated Rural Development;
- Physical Outputs Now vs. Post-BALAD Sustainability; and
- Public vs. Private Sector Development Strategies.

These sets of alternatives involve trade-offs because it takes time and resources to pursue any one of the above pairs.

Even in its Infrastructure Development Phase, BALAD contained what could be considered elements of an Integrated Rural Development (IRD) strategy, such as the Special Development Activities. During the IRD phase, the Project continued to rehabilitate roads and make remedial infrastructure repairs.

Concentration on physical infrastructure outputs leaves less time and money to strengthen institutions, which are intended to sustain the project's progress. It takes years to develop institutions.

BALAD was designed following a primarily public sector development strategy. This changed over time until, by the end of the Project, various private sector elements had more prominence. But again there is a trade-off. The public and private sectors require different approaches. Different kinds of interventions are called for in dealing with the public and private sectors.

Broadly speaking, the GOB, as contrasted with USAID, gave higher priority to infrastructure construction, physical outputs, and a public sector development strategy. More bilateral dialogue perhaps could have narrowed differences, thereby contributing to tighter BALAD designs and better implementation. Consensus on objectives also contributes to sustainability.

Many people find institutional and planning issues abstract and questionable. Whatever development approach is taken, it is useful for public relations in a remote area like the Makran for projects to include tangible components, and to construct something people can see.

c. Rigor of BALAD's Design

A rigorous project design is one in which the following elements are explicit, clear, and consistent from the input level through higher level of objectives:

- narrative statement of objectives,
- indicators and their means of verification, and
- assumptions.

Fortunately, in the 1970's USAID supported the development of a design tool called the "Logical Framework" which incorporates these elements in a systematic way. USAID requires that all Project Papers include a Logical Framework.

The evolution of BALAD's design is presented in simplified form in Figure 9. In the initial implementation phase of Infrastructure Development, the design was reasonably well integrated. In the Transition Phase, integration was only partially achieved as agricultural and planning activities commenced. In the first three months of the Integrated Rural Development Phase, the design was explicitly integrated to a great extent. That integration was lost during most of 1991, as BALAD was cut back and new kinds of activities added.

The Project Paper's original Logical Framework was never revised during BALAD's implementation. In Phase I: Infrastructure Development, there was a major change in the original design. The Project concentrated on physical outputs to build credibility with the local population; for the same reason, the Overseas Vocational Training component was added to BALAD. Institutional strengthening was set aside. Arguably, the emphasis on "credibility" constituted the addition of a new (political) objective to the Project. While not formalized as a redesign, it appears that BALAD participants were clear as to what the Project was attempting during this phase.

In Phase II: Transition, BALAD placed more emphasis on institutionalization, planning, and agriculture. The balance to be struck between these elements and the construction of road and water projects was unclear.

Phase III was the Integrated Rural Development phase of the Project. This Phase can be split into two periods: from October 1, 1990 through January 9, 1991, and from January 10 to December 31, 1991.

Under the LBI contract extension beginning October 1, 1990 the TA Team prepared a Work Plan specifying the outputs it would deliver through September 1992. The team used objective trees to show the relationships, horizontal and vertical, among objectives. Through interconnected branches, low level objectives were linked to BALAD's overall goals. BALAD's higher level objectives from the December 1990 Work Plan are shown in Figure 10. Note the agricultural objective on the right:

SUCCESSFUL
RESULTS OF BALAD
ON FARM
DEMONSTRATIONS
DISSEMINATED

This output objective was to be achieved by accomplishing lower output objectives, as illustrated in Figure 11. Low level objectives, such as "[agricultural] areas identified" were linked to the BALAD goal "Makran Better Integrated into Pakistan." On the objective trees the test of "manageable interest" was applied to judge what the team could with some confidence deliver; these objectives became "deliverables," corresponding to outputs in the Logical Framework. Assumptions were also addressed. The draft Work Plan underwent minor revisions in response to Mission comments and was presented to the GOB. On January 9 the Project Steering Committee in Quetta approved the Work Plan.

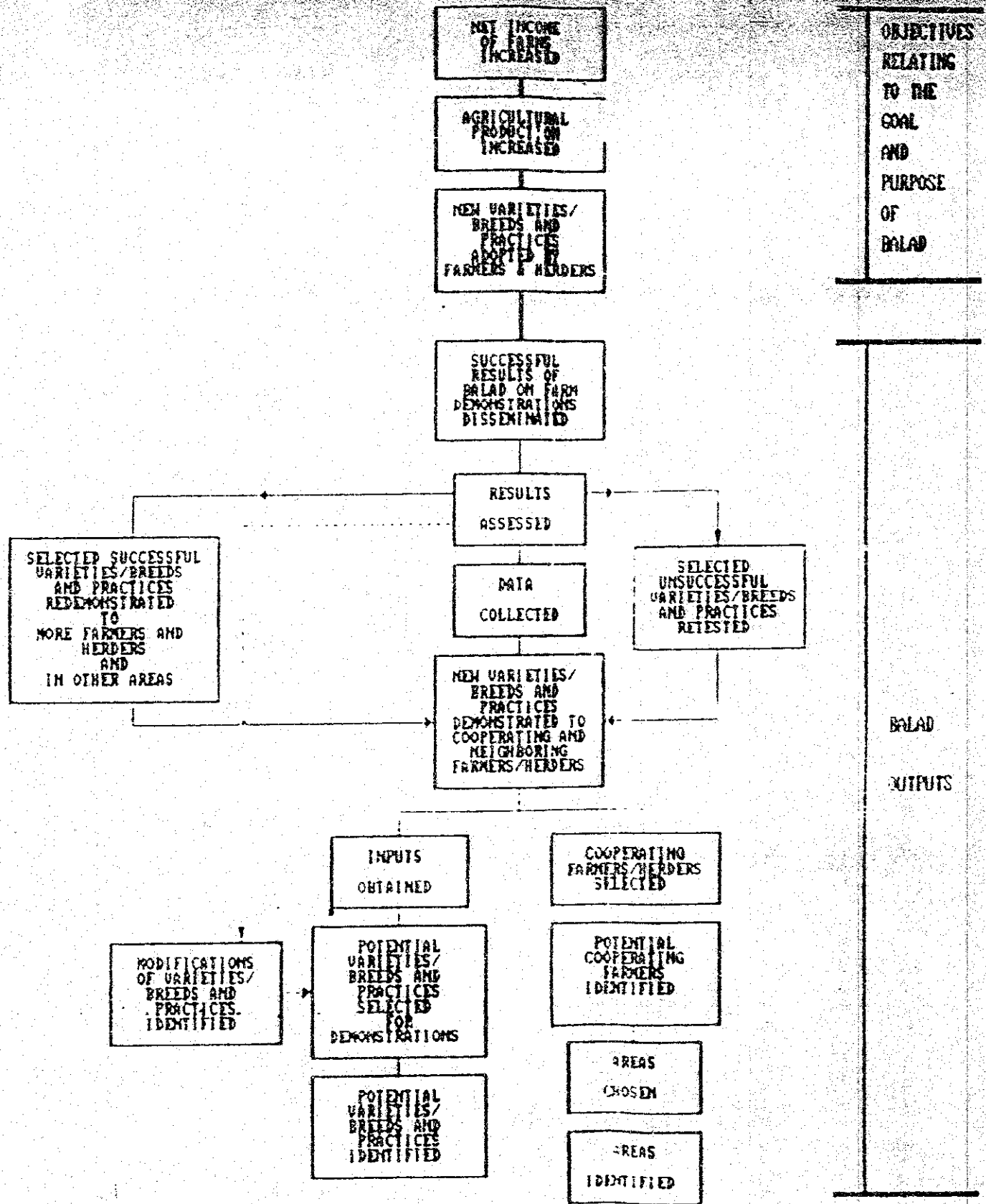
Although not presented in this format, the Work Plan adhered to the reasoning of the Logical Framework. Missing were proper statements of the purposes of BALAD; judgments about purposes are more the province of USAID than its contractor.

The second period of the Integrated Rural Development Phase began with the Mission's direction to the expatriate TA Team to leave Pakistan by January 15 because of the war in the Persian Gulf. Subsequently, the Pressler Amendment resulted in BALAD's funding and scope being reduced. It had been anticipated that the PACD would be extended until September 30, 1992, but the existing December 31, 1991, PACD was confirmed. The expatriate road and water engineers were not allowed to return to BALAD; the Chief of Party and the Agronomist returned in May 1991.

During and after the evacuation, activities not in the December 1990 Work Plan were added, such as those related to micro-enterprise, fisheries, tourism, newsletters, community participation, and emergency repairs to the Kech River Bridge. These activities and those remaining from the December 1990 Work Plan were not woven together into a new design.

It is natural and desirable that a project like BALAD should change in response to circumstances, lessons learned along the way, and altered priorities of the sponsoring governments. BALAD did

FIGURE 11



change. For two periods -- the year-and-a-half Transition Phase and the last eleven months of the Project -- objectives were not fully integrated. During most of BALAD's implementation, however, there was clarity in objectives. Phase I, which lasted more than three years, was clearly focussed on infrastructure development.

d. Phased Designs

BALAD would have benefitted from periodic redesign processes. The process should have been collaborative, involving the GOB, USAID, the TA Team, and other interested parties. Key decision-makers should have interacted and sought common ground, especially concerning BALAD's purposes.

The term "phased" is used rather than "rolling." The latter term could be interpreted to suggest that, since change is dynamic, the project design should be continuously changing. This is impractical from a management viewpoint.

e. Purpose Level Monitoring Indicators

The lack of properly specified BALAD purposes and their *de facto* changes over time meant that the Purpose Level Monitoring Indicator (PLM) exercises in 1990 and 1991 for BALAD were inadequately grounded. Two key questions were not answered:

- There was the original design and more than one *de facto* designs since then: which one should serve as the baseline for comparison?
- What would the specified purposes and their indicators have been, if they had been defined at the time the changes were made?

Instead, an approach was taken which maximized use of output indicator data, which was generally available, and used common sense to say something at the purpose level. In practice this meant casting about for data that showed some sort of impacts arising from the outputs. This process resulted in the output, and so-called purpose, level indicators prepared by the TA Team at the request of the Mission. These were accepted by USAID in September and October 1991. This approach was adopted as an understandable response, carried out in good faith, to meet administrative requirements.

On balance, the absence of properly specified, *ex ante* purposes and indicators undermined the validity of the PLM results and may have clouded their intended usefulness for the Mission and AID/Washington.

One additional problem with the indicators merits mention, although it is one some development professionals may feel uncomfortable discussing. Especially in the early years of the Project, some actions were taken to satisfy political objectives. This implies that there should be political purposes which capture the resulting impacts. Omission of political indicators for BALAD meant that the PLM indicators were incomplete. If one of the political purposes was to foster more favorable attitudes towards American-assisted development, then the omission of an appropriate indicator led to an understatement of BALAD's payoffs.

There was a political element in BALAD's inclusion of construction of schools and some water projects, and of the Overseas Vocational Training. These activities were subjected to a cursory development review; baseline data were not generated. There was, for example, an absence of baseline data at the purpose level for the schools, which was impossible to re-create in 1991, when the attempt was made. In short, politically-influenced activities generated development impacts that were difficult to measure.

f. Design Tools

Although largely neglected in BALAD, the Logical Framework is a powerful tool for designing Area Development Projects as well as for the management, implementation and later for redesign. "Objective trees" are a useful device for elucidating the horizontal and vertical relationships among objectives. Application of the test of "manageable interest" separates the "output" level in the Logical Framework from the higher levels. An objective is said to be with the project's manageable interest if its accomplishment can be confidently projected with the given time period and assigned resources and assuming the (fairly safe) assumptions hold true.

2. Lessons Learned

a. Differing High Level Objectives

The Overseas Vocational Training Program, initiated to counter local political opposition, for which USAID paid a high price, appears at this point to have been a development failure.

BALAD has often tried to be too many things. There was a tendency to add components. It would have been helpful at times for BALAD's decision-makers to have decided that certain items could not be effectively integrated into the existing Project.

Increased dialogue between USAID and GOB could have contributed to tighter project designs and better implementation. Consensus on

objectives contributes to sustainability. Over time, BALAD's design became more complicated and ambitious. More frequent and open bilateral decision-making about what BALAD should be could have resulted in better consensus on fewer higher level objectives, thereby making BALAD more manageable and sustainable.

b. Phased Designs

BALAD should have gone through periodic formal redesign. The process should have been collaborative involving the GOB, USAID, the TA Team, and other interested parties. Key decision-makers should have interacted and sought common ground, especially concerning BALAD's purposes. Logical framework exercises should have been conducted for BALAD components that were candidates for redesign.

Change and development are by nature dynamic, but project design should not be a continuously changing target. This is impractical from a management viewpoint.

c. Purpose Level Monitoring Indicators

The lack of clearly specified BALAD purposes made the Purpose Level Monitoring Indicator (PLM) exercises more difficult. The absence of properly specified, ex ante purposes and indicators undermined the validity of the PLM results and may have reduced their usefulness for the Mission and AID/Washington.

Omission of political indicators for BALAD meant that the PLM indicators were incomplete. If one of the political purposes was to foster more favorable attitudes by Makranis towards American-assisted development, then the omission of an appropriate indicator led to an understatement of BALAD's payoffs.

E. MANAGEMENT

1. Analysis

a. BALAD Compound and Vehicles

Because of Turbat's remote location and lack of utilities, it was necessary to build a large compound with its own water and power supply. The BALAD compound's office, storage, vehicle maintenance, and residential buildings provided an essential base of operations for the TA Team.

Many of the LBII staff, Pakistani and expatriate, lived on the compound and its amenities were important for their welfare and morale. The facilities are generally excellent. More attention probably could have been given to the Makran's climate in designing the two large residential blocks.

The TA Team operated a motor pool of some 30 vehicles. It was quickly learned in the early months of BALAD that heavy, four-wheel drive vehicles were required to cope with the Makran's bad roads.

In short, in remote Turbat the BALAD compound's self-contained work, residential, and recreational facilities were important to staff productivity and welfare.

b. Personnel

1) Pakistani Staff

The TA Team was a mixture of people from different places. A typical employment level would break down as follows:

Local Balochis	78
Other Pakistanis	37
Expatriates	3

Total	118

About two-thirds of the employees were local Balochis, but few were employed in professional positions, as there is a shortage of Balochis with engineering and other professional qualifications.

For the people of the Makran, the direct employment of local people was perceived as an important Project benefit. For LBII management, it was necessary to be aware of the local Balochi culture and to have Balochis represented in BALAD's Team at the professional as well as support level.

LBII's non-Balochi Pakistanis and expatriate employees provided skills that were not found in the Makran's labor force. There was very low turnover among the Pakistani staff. The quality and stability of the TA Team enabled LBII to meet its responsibilities well.

2) Expatriate Staff

The periods of employment of the long-term expatriate staff are given in Table 7 and displayed in Figure 12. Generally speaking, throughout the Project the TA Team consisted of a Chief of Party, a Roads Engineer, and a Water Engineer. An Agronomist and Planner were added in 1989 and 1990, respectively.

The last two Chiefs of Party also had technical responsibilities: James Schoof in Water Resources and T. Dwight Bunce in Planning. The long tenures of Douglass, Jones, and Bradbury provided continuity to the expatriate staff, which is important in a Project as complex as BALAD. On the other hand, there were a few gaps between the departure of expatriates and the arrival of replacements.

BALAD's management history is instructive. COP David Jones productively used his time managing the TA Team and coordinating with USAID and the GOB. Jones presided over most of the Infrastructure Development Phase of BALAD. Schoof held sway during the Transition Phase, where, as he described it in his Close Out Report (p. A-1), the project was "...groping for a balance between its planning orientation, social objectives, and necessity for some physical accomplishment." At this time, USAID was reconsidering BALAD's higher level objectives. Bunce, the COP during the IRD Phase, was also the expatriate Planner. His tenure was affected by the evacuation of the four-person expatriate team in January 1991, with only Bunce and Agronomist Bradbury allowed to return in May, and the application of the Pressler Amendment from late January through December 1991.

The senior team members were evacuated from BALAD's base in Turbat, at a time when the effects of the Pressler Amendment took a heavy toll on the Project. Ten million dollars were de-obligated and the expatriate long-term team was halved. The Pressler Amendment changes continue as this report is being written. A six-month extension of the BALAD PACD was signed by the Mission Director on November 25, 1991.

Use of short-term consultants, and the various USAID approvals needed, add to the already high administrative burdens of a large USAID-financed TA contract. Table 8 lists the short-term consultants used on the Project.

TABLE 7

LBII LONG-TERM TA TEAM

NAME	DESIGNATION	DURATION	
		FROM	TO
DAVID GAISER	COP	JAN 5, 1986	SEP 1, 1986
STEVEN SHEPLEY	PLANNER	JAN 5, 1986	OCT 9, 1986
DAVID DOUGLASS	WATER	FEB 21, 1986	FEB 15, 1989
STEPHEN KAMBOL	ROADS	APR 21, 1986	JUN 1, 1987
DAVID JONES	COP	NOV 11, 1986	MAR 10, 1989
NEDHAM HERRING	ROADS	JUL 26, 1987	AUG 10, 1989
GARY BRADDOCK	CONSTRUCTION	JUN 29, 1988	MAY 27, 1989
JAMES SCHOOF	COP/WATER	APR 16, 1989	AUG 14, 1990
DANIEL BRADBURY	AGRONOMIST	JUN 10, 1989	DEC 31, 1991
THEODORE MCKENZIE	ROADS	JUL 30, 1989	AUG 1, 1990
T. DWIGHT BUNCE	COP/PLANNER	SEP 21, 1990	DEC 31, 1991
DAVID BOGGS	WATER	OCT, 1990	MAY 31, 1991
KENT LANDE	ROADS	NOV, 1990	MAY 9, 1991

...

LNGTRMTM/OH-53.

LBII LONG-TERM EXPATRIATE STAFFING 1986 - 1991

NAME	DESCRIPTION	1986		1987		1988		1989		1990		1991	
		OTF	OTP	OTF	OTP	OTF	OTP	OTF	OTP	OTF	OTP	OTF	OTP
DAVID BAISEF	OPS												
STEVEN SHELLEY	PLUMBER												
DAVID DUNLAP	WATER ENG.												
STEPHEN KAMP	ROAD ENG.												
DAVID TOME	OPS												
DEONNA WERDING	ROAD ENG.												
HEAT BRADSHAW	CONSTRUCTION												
JAMES SCHOES	PROP/WATER ENG.												
DAVID BRANSON	MECHANICAL												
THEODORE KERSHNER	ROAD ENG.												
DAVID BIRCH	PROP/WATER												
DAVID ROGGS	WATER ENG.												
FRANK LEWIS	ROAD ENG.												

SHORT TERM TECHNICAL ASSISTANCE

NAME	DURATION	DUTIES
EXPATRIATE		
DON FARROR	JUL. 8 - AUG. 30, 1986	Equipment needs assessment
DR. NEK BUZDAR	AUG. 14 - DEC. 14, 1986	Socio-Economic Survey
DR. NEK BUZDAR	APR. 1 - JUL. 31, 1987	Socio-Economic Survey
VIRGIL HARRINGTON	APR. 23 - AUG. 30, 1987	Computer Assessment P&D
ARTHUR DERRY	MAY 10 - JUL. 10, 1987	Dam Design
RALPH BRUMWELL	JUL. 87 (7 DAYS)	HEQ Specifications
RALPH BRUMWELL	OCT. 87 (4 DAYS)	HEQ Specifications
ZAIDAN-E-ABDEL EL	FEB. 26 - MAR. 25, 1990	Date Cultivation Program
THE COVERDALE ORG.	MAY 3 - MAY 25, 1990	BALAD II Workshop
THE COVERDALE ORG.	OCT. 5 - OCT. 14, 1990	BALAD Evaluation Workshop
THE COVERDALE ORG.	MAY 20 - JUN. 8, 1991	Baloch. Chamber of Commerce
STERLING HAYDON	MAY 29 - AUG. 8, 1990	Training Assessment
GILBERT LANE	JUN. 11 - JUL. 18, 1990	Private Sector Investment Climate Study
STEVEN SILCOX	JUN. 11 - JUL. 18, 1990	Private Sector Investment Climate Study
F.S. MASSON	JUL. 22 - SEP. 15, 1991	Date Marketing Study
F.G. MASSON	OCT. 91 - NOV. 6, 1991	Fresh Fruit Marketing Study
JEFFERY BREWER	JUL. 21 - OCT. 29, 1991	Project Close Out
CHARLES SWEET	AUG. 8 - NOV. 12, 1991	Planning Specialist
LAURIE RICHARDSON	OCT. 27 - DEC. 19, 1991	Project Close Out

TABLE 8 (Contd.)

SHORT TERM TECHNICAL ASSISTANCE

NAME	DURATION	DUTIES
	LOCAL	
M.M. IRANI	DEC. 1 - JAN. 18, 1990	Date Processing
M.M. IRANI	JUL. 27 - SEP. 3, 1991	Date Marketing
S.A. SHAH	MAR. 12 - MAR. 15, 1991	Preliminary Hydromet Design
M.Y. BAJWA	AUG. 10 - OCT. 10, 1991	Planning Specialist
GEOLOGICAL SURVEY OF PAKISTAN	AUG. 28 - OCT. 30, 1991	Electro Resistivity Survey
K.A. SIDDIQUE	OCT. 1 - NOV. 5, 1991	Fruit Marketing

SHRTRMAS.WK1/UH-53.

c. Administration

Implementing BALAD resulted in great demands for administrative services -- communications, transportation, payroll, fringe benefits, approvals from USAID, modifications of scopes of works and contracts, and accounting. Major contributing factors to these demands were:

- Turbat's remote location,
- Inadequate communication facilities,
- Offices involved with BALAD located in several cities: Turbat, Quetta, Islamabad, and East Orange,
- USAID reporting requirements, including:
 - o Quarterly Reports and Work Plans,
 - o Reports of short-term consultants,
 - o Reports on projected official travel outside the Makran of the senior LBI staff,
 - o Reports on the projected leaves of LBI professional staff,
 - o Monthly administrative close out reports,
 - o MIS reports on sub-projects,
 - o Technical reports of long-term staff.
- Requirements related to Short-Term Consultants
 - o USAID Project Officer approval of consultants, their scopes of work, and international travel,
 - o Approval of daily rate and six-day workweek by the USAID Contracting Officer,
 - o Preparation of budgets for each assignment,
 - o Approval from the GOB to travel to the Makran,
 - o Approval from the Regional Security Officer of the American Consulate in Karachi to travel to the Makran.

- Changing contractual arrangements for the TA Team's Pakistani staff members,
- Contract extensions and modifications.

Fortunately, LBII had senior Pakistani administrators to cope with the administrative work arising from the above factors; the COPs also had to devote time to these tasks. In response to a very helpful Mission suggestion in May 1991, LBII assigned Administrative Specialists (first J. Brewer, then I. Richardson) to shoulder administrative burdens related to the close out of the Project from July through December 1991.

d. Coordination and Communication

In BALAD, coordination and communication between the GOB and USAID, and between each government and LBII were important.

Ideally, in the implementing process the three key implementing BALAD organizations would be kept generally informed, with each organization receiving as well the particular information to meet its needs.

1). Communication with USAID

In addition to administrative communication, it is important for LBII to understand what the Mission wants done technically. A key starting point is the contractual scope of work, but when circumstances and Mission priorities change, scopes of work can change, or the approaches to and weight of particular tasks can be altered accordingly.

A positive factor in communication was the low turnover in USAID Project Officers; two Project Officers covered almost the entire implementation period, as shown in Figure 13.

The mass of reports provided by the TA team was probably useful, but overall reporting could have been improved. In the context of a clear design, information needs of the USAID and GOB could have been better defined.

In late 1990, drafting a new Work Plan that explicitly laid out interrelationships among objectives and eliciting reactions from Mission personnel enabled LBII to better match the December 1990 Work Plan's activities to the Mission's views. Discussions on the definition of that Work Plan helped to establish a consensus between USAID and the GOB on where BALAD was going.

FIGURE 13

PROJECT OFFICERS

NAME	1984				1985				1986				1987				1988				1989				1990				1991							
	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1				
ROBERT TRALSTER																																				
FRANK PAVICH																																				
KARIM HAYARI																																				

FIGURE 14

DIRECTORS OF PPMU

NAME	1984				1985				1986				1987				1988				1989				1990				1991							
	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1	QTR4	QTR3	QTR2	QTR1				
Col. (Ret.) MIRZA AFSHAR-UL-HAQ																																				
ABDUL CHAFFAR WADEEN																																				
MIRZA HASAUD JAMEED																																				
MOHD. IRFAN YASI																																				
CAPT. (Ret.) ABDUL REHMAN TAREEN																																				
POST VACANT																																				

LSPR/DIR/PPM/ACR1

2) Communication with the PPMU

As shown by Figure 14, there has been some turnover in the PPMU Directors; the longest serving, Mirza Masaud Ahmed was and still is the Deputy Director, who filled in (as shown) as the Acting Director. For much day-to-day business, relations between LBII and the PPMU were smooth but at times there were tensions.

Sometimes the tensions reflected the interaction of personalities. But there was a serious underlying question: Who was in charge of BALAD? Some PPMU Directors believed that they could direct BALAD to the extent of ordering LBII to do certain things. On the other hand, LBII was under the guidance of the Project Officer pursuant to the USAID-LBII contract. It may not have been appropriate to turn over major implementing responsibilities to the PPMU, which was not fully staffed.

The question of who was in charge itself leads to a more fundamental question. That is, was it more important to work through the PPMU, strengthening it in the process, or to rely heavily on the TA Team and accelerate the generation of (non-institutional) outputs? This is one of the development trade-offs discussed in the assessment of project design.

2. Lessons Learned

For the people of the Makran the direct employment of local people was perceived as an important project benefit. For LBII management, it was necessary to be aware of the local culture and to have Baluchis represented in BALAD's team at the professional as well as support level.

An ambitious Integrated Rural Development (IRD) project, such as BALAD in its second and third phases, needs a full-time manager as Chief of Party.

The three key implementing BALAD organizations -- USAID, GOB, and LBII -- should be kept generally informed, with each organization receiving as well the particular information to meet its needs.

In the context of a clear design, information needs of the USAID and GOB could have been better defined.

F. COMMUNITY PARTICIPATION

1. Analysis

The topic of community participation is one that has involved BALAD in different ways, usually as an aspect of BALAD's water, agricultural, and SDA activities.

Community participation can cover a range of development interventions. At one extreme is a community development model in which, with some external facilitation assistance, a community

- identifies its felt needs,
- chooses solutions to meet them,
- mobilizes its own resources,
- implements the solutions,
- monitors and evaluates results,
- and repeats the cycle.

At the other extreme, a government or donor determines what it believes is best for a community and implements programs with little or no community involvement.

BALAD's interventions were between those extremes. Activities with community participation elements are assessed in the sectoral assessments above for water, agriculture, and SDAs, to which the reader is referred.

In Phase III of BALAD, more explicit consideration was given to community participation. In 1991, efforts were made by BALAD to encourage the Balochistan Rural Support Programme, a Pakistani NGO supported by the German Government, to initiate activities in the Makran. These efforts were ultimately unsuccessful.

BALAD successfully carried out a Local Contribution Project at Basol Karez. The Project replaced a four-inch pipe crossing a nullah with a 12-inch one, and made ancillary improvements to reduce leakage and to withstand floods. BALAD provided the pipe and technical supervision; the Karez Owners Association provided labor and other materials. This project and a similar one are analyzed in the report "BALAD Local Contribution Projects: Implications for Participatory Local Development Efforts," October 1991.

2. Lessons Learned

Participation by the recipients in both project selection and implementation increases the likelihood of better quality construction and its subsequent proper operation and maintenance. Thus community participation can contribute to the sustainability of construction projects, such as primary school construction and karez improvements.

Farmers need to have a personal stake in the development process. Demonstration programs should be held on farmer's land rather than on government farms. The demonstrations should include major contributions from the farmers in the way of land, water and labor, while the Project should concentrate on basic inputs such as seeds, fertilizer and ideas. The farmer should fully participate in the land preparation, sowing, application of treatments, etc.

Farmers participating in a well organized on-farm demonstration program develop a sense of community through project efforts such as field days, study tours, etc. This should be encouraged and can be directed to reinforce agricultural change, increase the likelihood of sustainability of changes introduced, and facilitate the spread of development ideas.

On farm demonstrations conducted by BALAD incorporated significant beneficiary contributions. These demonstrations are promising avenues for future agricultural development in the Makran. Such development through various linkages will help the community, but demonstrations per se are not vehicles for non-agricultural community development. It is possible that the demonstrations over time could be channeled through local farmers organizations, but such organizations do not presently exist in the Makran.

Karez Owners Associations appear to be more akin to a form of business organization than to broad-based community organizations. It is doubtful whether such associations could serve as the institutional mechanism for a variety of interventions intended to help the community at large.

3. Development Opportunities

On Farm Demonstrations are an excellent way to achieve beneficiary contribution to agricultural development efforts sponsored by donor organizations.

NGOs may be a useful way to achieve community participation in the Makran. BALAD had no direct experience in this regard (NGOs are a rare breed in the Makran). If an NGO is used, care should be taken so that its activities do not fall prey to political influences which undermine the development purposes.

G. PRIVATE SECTOR DEVELOPMENT

1. Analysis

While BALAD overall has followed a public rather than a private sector development strategy, BALAD began in the Transition Phase and then in the IRD Phase to give more attention to private sector development. BALAD's involvement with the private sector may be analyzed in two broad categories: direct action, and studies and workshops.

a. Direct Action

In the Makran, BALAD has directly helped farmers and private sector construction contractors. Those experiences were assessed in the Agriculture and Management of Construction sections above.

b. Studies and Workshops

In mid-1990, two LBII consultants, Stephen C. Silcox (Marketing Specialist) and Gilbert Lane (Investment Finance Specialist) conducted a province-wide assessment of the prospects for private sector investment in Balochistan. Their report, "Private Sector Investment Climate Assessment of Balochistan" (July 18, 1990), identified numerous constraints and concluded that private sector investment potential was limited to a few areas.

BALAD carried out fisheries and tourism studies which promoted private sector involvement. These studies resulted in the reports "A Preliminary Review of the Fisheries Potential Off the Balochistan Coast" (July 1991) and "Opportunities for Tourism: Preliminary Review" (October 1991).

In the area of agriculture, specialized studies were prepared, all concerning private sector potential, resulting in the following reports:

- "Date Processing Factory, Turbat," by M.M. Irani
- "A Program for Improvement of Date Palm Cultivation, and Processing in Makran Division," by Zidan E. Abdel-AI
- "Marketing of Makran Dates," by M.M. Irani and F.G. Masson
- "Marketing of Panjgur Fruits," by K.A. Siddiqi and F.G. Masson.

In 1990 and 1991, BALAD organized and/or presented a number of workshops or conferences which involved the private sector:

- BALAD II Planning Workshop with representation from the Balochistan private sector, held in Karachi, May 1990. Many ideas suggested for BALAD II concerned the private sector.
- BALAD Evaluation Workshop with representation from the private sector, held in Quetta, October 1990, considered private sector issues.
- Workshop for the Balochistan Chamber of Commerce, with BALAD logistical support, in Karachi, June 1991.
- BALAD Planning Conference, in Quetta, October 1991, where the partnership of the public and private sectors in regional planning was emphasized.

The ideas presented in these studies and workshops are at different stages. In some cases further studies are indicated -- for fisheries, for example, to determine the stock of pelagic fish (e.g., tuna). A few studies made recommendations which are closer to having developmental impacts, such as the analysis of date marketing which recommends private sector date auctions houses for Turbat and Panjgur, possibly with Asian Development Bank financing.

All of these BALAD studies and workshops involved private sector representatives and expert consultants in the identification of development opportunities.

2. Lessons Learned

The overall lesson is that there are private sector investment opportunities in the Makran, but the constraints are serious. For many of the possibilities, further study is indicated before deciding whether major investments are warranted.

Private sector support organizations in the Makran and elsewhere in Balochistan are non-existent or weak. Thus institutional mechanisms are lacking through which donors, such as USAID, could work. The Balochistan Chamber of Commerce and Industries has the potential to take on a much more important development role in the province.

Karez Owners Associations are close to being business associations, as discussed in the report: "BALAD Local Contribution Projects: Implications for Participatory Local Development," October 1991. These associations merit further examination.

Lessons learned concerning agriculture and private construction contractors are discussed in the Agriculture and Management of Construction sections of this report.

3. Development Opportunities

BALAD studies and workshops have uncovered potential opportunities which are discussed in specialized project reports. In many cases, such as fisheries and tourism, further studies are needed before deciding whether bona fide opportunities exist which warrant investments.

Opportunities for private sector participation in agricultural development are presented above in the assessment of the Agriculture component of the Project.

The creation of a cell for Market Research and Feasibility Studies within the Balochistan Chamber of Commerce and Industries, which is under active consideration, may help in the identification and realization of development opportunities.

CHAPTER IV

THE LARGER LESSONS LEARNED

This chapter presents a summary of lessons learned organized by topics of particular development interest. They were distilled from the more detailed lessons learned contained under each of the Project components in Chapter III: ASSESSMENT.

The synthesized, larger lessons have broader implications for planners, managers, and participants in integrated rural development projects in the Makran, as well as in other parts of the world.

A. INFRASTRUCTURE DEVELOPMENT

For technically sound and cost effective development of infrastructure, planning is essential. Planning for the roads and water sectors should be in the context of comprehensive regional plans. The framework of the Regional Plan for Coastal Makran helped establish the water and road development interventions most critical for regional growth and for meeting the most pressing human needs.

Effective management of scarce water resources needs to be based on a continuing analysis, for each water basin in the Makran, of existing groundwater, annual withdrawals, and the natural and artificial replenishment. Use of basin water balance analyses can help planners and regulators take steps to prevent over-exploitation and groundwater depletion, and their negative human and economic impacts.

There are many modern road planning and engineering methods which can be usefully applied in the Makran: the BALAD TA Team, working with C&W, developed and began application of:

- the road classification system,
- geometric road standards,
- road condition surveys, and
- traffic counts.

The TA Team usefully provided construction supervision and technical direction, resulting in a much better quality of work than would otherwise have been the case.

Given leakages of various sorts in the GOB contracting arrangements, it was advantageous for USAID to maintain significant financial oversight with the assistance of LBII.

The Force Account arrangement with C&W permitted BALAD to contract rapidly for road work when fixed quantities could not readily be estimated, and enabled BALAD to maintain significant financial and technical control.

B. INSTITUTIONAL DEVELOPMENT

1. The Need for Change

Effective public institutions are necessary for the Makran to be developed.

In spite of BALAD's provision of substantial technical assistance, training, and equipment over the years, there was little improvement in the performance in the Makran of:

- the Communication & Works Department,
- Agricultural Extension, and
- the PPMU (in planning, as contrasted with contracting for construction, in which it performed well).

Equipment provided to C&W by USAID is not being maintained to realize its useful life. C&W is not implementing a coherent strategy for either road rehabilitation or maintenance; it works mostly on an ad hoc basis.

C&W management personnel are moved around too frequently; unless a supervisor or engineer is allowed to remain at post for at least 2 1/2 - 3 years, no continuity can be developed and no future replacements can be trained.

A better and more consistent means of cash flow from the central government to the outlying districts needs to be developed. C&W's work is often stopped for lack of payment and fuel vendors often refused to deliver petroleum-oils-lubricants because of long overdue payments.

Low cost agricultural development can be achieved through a well planned program focused on farm based demonstrations. Introduction of change in the agricultural practices of remotely located farmers served by poor infrastructure is possible provided a "farmer first" approach is used. But the Agricultural Extension service is largely ineffective as an agent of change in the Makran.

Within the current GOB planning system, including the PPMU, information flows tend to be top-down, with little dialogue on development priorities. If a decentralized planning system is developed, there will be a need for two way dialogue and greater and more systematic information sharing.

Overall the PPMU, as a planning unit, remains at any early stage of development. More collaboration among the PPMU, P&D in Quetta, USAID, and the technical assistance team could have led to more improvement in PPMU's capability at the end of the project.

Institutional development takes time and much cooperative interaction, both formal and informal.

2. The Changes Needed

a. Institutional Reform

In the GOB, major institutional reform would be needed to develop effective line agencies. Reform would require some combination of political will, high level administrative commitment, higher pay for employees, and better qualified technical personnel. Such a combination was absent and BALAD made little headway on its institution strengthening agenda.

Regional Planning and the related public and private sector investment promotion are needed in the Makran but there is no institution mandated and equipped to pursue them.

Institutionalization of regional planning requires policy commitment, leadership, a defined data collection and analysis system, and improved government decision-making linkages.

b. Training

BALAD long- and short-term expatriate specialists and managers filled the expertise gaps to enable important project objectives to be achieved much sooner than otherwise. The foreign advisers, through on-the-job training, imparted their skills to Pakistani BALAD counterparts, and to a much lesser extent, to line agency personnel.

Farmer training can be carried out inexpensively but the motivation to plan and conduct the training is less easy to obtain. Training of Agricultural Extension and On-Farm Water Management staff at the local level may increase certain skills, but there is little hope these skills will be put to use unless and until major changes in the entire system of Agricultural Extension takes place.

From a development viewpoint, the \$ 1.5 million spent on the Overseas Vocational Training has borne little fruit to date. Perhaps a few trainees could have been sent to the U.S. for training on a highly selective basis with guaranteed jobs awaiting their return.

Farmers, equipment operators and maintenance staff of C&W, and others, received useful training from BALAD. The training of line agency personnel, however, did not significantly increase the effectiveness of those agencies. Other kinds of training, as well as various other changes would be needed to make a marked impact on the performance of line agencies.

C. COMMUNITY PARTICIPATION

Farmers need to have a personal stake in the development process. Demonstration programs should be held on farmer's land and not government farms. Farmers participating in a well organized on-farm demonstration program develop a "sense of community" through project efforts such as field days, study tours, etc.

On farm demonstrations conducted by BALAD incorporated significant beneficiary contributions. The demonstrations are promising avenues for future agricultural development in the Makran. Such development will help the community through various linkages, but the demonstrations per se are not vehicles for non-agricultural community development. It is possible that the demonstrations over time could be channeled through local farmers organizations, but such organizations do not presently exist in the Makran.

The inclusion of SDAs in the Project design was valuable in overcoming the initial resistance to the foreign presence in the Makran. This factor alone would justify inclusion of this type of program in projects implemented under similar circumstances.

Detailed sociological investigations of the proposed alignments of infiltration galleries must be undertaken prior to project design since access rights for existing karezes and korjos are matters of intense local disputes.

Participation by the recipients in both project selection and implementation increases the likelihood of better quality construction and its subsequent proper operation and maintenance. Thus community participation can contribute to the sustainability of construction projects, such a primary school construction and karez improvements.

In the Makran there is popular participation in planning through the local council system but its effectiveness is limited by low literacy and lack of understanding of the local planning and

development process. Few local resources are invested. Adult education and intensive community development work are required to increase local decision-making capabilities.

NGOs may be a useful way to achieve community participation in the Makran. BALAD had no direct experience in this regard; NGOs are a rare breed in the Makran. If an NGO is used, care should be taken so that its activities do not fall prey to political influences which undermine development purposes.

On the other hand, the Karez Owners Associations appear to be more akin to a form of business organization than to a broad-based community organization. It is doubtful whether such an association could serve as the institutional mechanism for a variety of interventions intended to help the community at large.

Local people and farmers are used to traditional and well-established ways of tackling their engineering problems. Before introducing any new technology or method, it was important for BALAD to be sure of the innovation. Groundwork must be laid to convince the local people of the advantages of new technologies before introducing them.

D. PRIVATE SECTOR DEVELOPMENT

1. Construction Contractors

Progress was made in upgrading the capabilities of private contractors. Over the years, their performance on BALAD work improved and they learned how to utilize the Unit Rate System of Bidding. Local contractors remained fairly small, but some of the contractors who started off with BALAD are now bidding for bigger contracts with other agencies.

In the contractor selection process, contractors that come from the villages where the work is being done are less likely to do sub-standard work. For the small amount of money they can save by doing inferior work, they risk hurting their local reputation. This factor should be considered in the selection criteria of the contract award process.

Strict construction supervision contributed greatly to the improved quality of construction work of private contractors.

Design of construction projects should be done keeping in view the local availability of the particular labor force skills. Similarly, the availability of construction materials specified in the tender documents should be kept in mind. When such problems were present in the tender documents, potential bidders were discouraged from submitting bids.

Designs of small construction projects should be as simple as possible so they can be understood by local people and farmers, and replicated by them in the future.

2. General

Private sector support organizations in the Makran and elsewhere in Balochistan are non-existent or tend to be weak. Thus institutional mechanisms are lacking through which donors, such as USAID, could work. This is also a gap impeding private sector participation in a proper regional planning process.

The Balochistan Chamber of Commerce and Industries has the potential to take on a much more important development role in the province.

The overall lesson is that there are private sector opportunities in the Makran but the constraints are serious. For many of the possibilities, further study is indicated before deciding whether major investments are warranted.

E. SUSTAINABILITY

Sustainability is a theme that is addressed to some extent in the preceding sections of this chapter. In this section, an overall assessment is provided.

Performance of public sector institutions in the Makran is inadequate. Of particular concern is the future operation and maintenance of the major investment represented by the BALAD Compound and the equipment donated to C&W.

The partly political decision to emphasize short-term visible outputs in Phase I of BALAD meant that institutional development was given lesser importance. The Project design incorporated in the December 1990 Work Plan integrated physical outputs with institutional ones, including training; that design stressed sustainability.

Due to the Pressler Amendment curtailment of BALAD, sustainability of the major objectives was jeopardized. On the other hand, various elements of BALAD may be judged to have reasonable prospect for yielding continuing benefits, such as:

- The BALAD-widened and contoured (rehabilitated) shingle roads will continue to provide better service than the previous tracks, even with poor C&W maintenance.
- The dams built to recharge aquifers should last for many years with little or no maintenance.

- The karez and korjo improvements, by and large, should be maintained by their private owners.
- The use of improved practices by farmers should continue.
- Trained BALAD and GOB staff potentially could apply their skills in various ways to improve the Makran or other parts of Pakistan.

The development opportunities summarized in the next chapter are well-crafted building blocks for any organization concerned with the overall development of the Makran. Over time, various Pakistani and foreign organizations may make use of them.

On balance, the impacts of the Pressler Amendment dealt the sustainability of BALAD accomplishments such a hard blow that the overall sustainability assessment is negative. Nevertheless many BALAD outputs will continue to provide benefits and an impressive number of solidly-based development opportunities are being left as a legacy.

CHAPTER V

DEVELOPMENT OPPORTUNITIES

This chapter gives highlights of development opportunities which BALAD has identified. The opportunities are discussed in more detail in Chapter III as well as in specialized BALAD reports. In many cases, such as fisheries and tourism, further studies are needed before deciding whether bona fide opportunities exist which warrant investments.

The development opportunities involving GOB line agencies cited in this chapter and in Chapter III should be carried out in the context of overall reforms to those agencies, as discussed in Chapter IV.

A. INFRASTRUCTURE DEVELOPMENT

The Road Sector Work Program consisted of a detailed program for strengthening C & W in four areas: maintenance management, equipment management, capital improvements, and training. This work program should be implemented in the Makran under the direction of an experienced Maintenance Management/Equipment Management Engineer.

The BALAD Work Plan of December 1990 included consideration of an alternate approach to achieving a much higher level of consistency in construction and maintenance of the road network. It proposed that a study be conducted to consider the possibility of a public authority being established and made responsible for the construction, rehabilitation, and maintenance of primary roads in the Makran.

Three major development opportunities have been identified in the area of water resources development: (1) projects to divert runoff water into carefully designed bunded and leveled areas; (2) the formation of the Makran Water Management Advisory Committee; and (3) implementation of small water development activities requiring strong beneficiary participation in their identification and construction.

To avoid the problems that have arisen elsewhere in Balochistan when groundwater development has taken place, the capacity and recharge of this resource must be determined. To initiate this study, a hydrometeorological monitoring network must be established to gather data on rainfall and run off. The groundwater monitoring system outlined in the karez and well inventory of the Makran also must be initiated. Data gathered from these two activities can be analyzed through computer modeling to predict the amount of

replenishment. Planners can use the information derived from these activities in decision-making about development and regulation of groundwater.

For Coastal Makran, preparing and implementing a Master Plan for the Development of Water Resources will support the growth of regional exports of fish and thereby the region's economy, as well as meeting vital and immediate human needs.

To identify possible new sources of potable water, bore holes should be drilled in accordance with the recommendations of the BALAD-sponsored Electro-Resistivity Study of the Gwadar District.

To protect its considerable investment in heavy equipment in the Makran, USAID may wish consider ways it can adequately monitor its operation and upkeep.

B. INSTITUTIONAL DEVELOPMENT

The GOB, international donors, and others interested in the development of the Makran, should consider the numerous and detailed training recommendations contained in the BALAD Training Program prepared by Dr. Sterling Hayden, as well as those in contained in Chapter III of this report.

An overall approach to training for C&W in the Makran is contained in the Road Sector Work Program prepared by the Road Section of the LBII Team in early 1991. Equipment operators and supervisory personnel in C&W deputed to road rehabilitation and maintenance operations are mostly under-trained. A significant amount of training has to be built in to any project hoping to raise the quality of work carried out by government service employees.

The 45 Makranis who received overseas vocational training through BALAD represent an unexploited potential to contribute to the development of the Makran and Pakistan through jobs, not yet obtained, with the GOB.

For the Makran and perhaps for other parts of Balochistan, regional planning is a practical tool to help the Government and others evaluate and compare interventions. Proper use of regional plans would afford the Government an opportunity to maximize the impacts of its expenditures, particularly those in the Annual Development Plans.

Improved planning capabilities can lead to more cost effective and sustainable development in the Makran. The PPMU and the BALAD compound represent human and infrastructure assets that could be built upon to establish a Makran Planning and Development Unit. The Unit would carry out planning activities, including the identification of investment opportunities, and could actively

promote those investments from public and private sources, Pakistani and foreign.

Priorities for the proposed planning unit include: 1) improving and automating the data collection and analysis system; 2) improving project formulation; 3) upgrading the project monitoring system; and 4) the initiation of project evaluations. A program of planning activities should be designed, with training and support requirements specified.

A strategy to institutionalize regional planning should focus initially on tactical short-term planning, designed to expand gradually the skills and institutional capabilities to carry out longer-term strategic planning in both governmental and private sectors.

For Coastal Makran, when health and education needs are assessed, it is important to identify to specific problems that affect the production of exports, and undertake activities to support those exports. A Manpower Survey is needed, for example, to determine how and to what extent illiteracy and lack of specific skills in the labor force are impeding regional exports.

C. COMMUNITY PARTICIPATION

The SDA funding process offers a flexible method for achieving development impacts. An SDA mechanism can provide infrastructure development; work to strengthen certain planning and development organizations; be channeled through NGOs to achieve community level development; or combinations of the above.

Public participation in the planning process is critical for its success, especially if dynamic regional growth is to take place. Local level private institutions are almost non-existent, except for the system of local councils. There appear to be two priorities in developing these initial capabilities. The first is to organize the businessmen and entrepreneurs so their inputs are considered in the planning process. The second is to increase village and local council decision making capabilities, perhaps through a combined adult education and community development program carried out by an NGO.

D. PRIVATE SECTOR DEVELOPMENT

A major study conducted by BALAD in 1991 identified the need for a date auction market to be established in Turbat. The establishment of an auction market would have a significant impact on the income of Makran date growers. The concept has the support of both growers groups in the Makran and the date export firms in the Sind. What is needed is the catalyst to bring the two together.

Introduction of fig cultivation in Panjgur District should be a high priority of any agricultural development program implemented in the region. The market demand, local and international, and the flexibility afforded by a fruit that can be sold either fresh or processed, make the expansion of fig cultivation an attractive prospect.

Potential training programs which can have a positive impact on the agricultural sector of the Makran are easily implementable at very low cost, using local resources and in-country expertise. Examples include training of farmers in Panjgur in grape vine pruning and vine grafting and rooting techniques; and training of Makrani farmers in the thinning of date bunches and improved pollination methods. Certain training can be contracted out to local specialists.

For Coastal Makran, the fishing industry is capable of further expansion both in terms of catch and value-added. The potential catch appears particularly great for large pelagic fish such as tuna. Additional facilities for storage and processing of fish would permit more revenues from a given catch to be received as income by the region's residents.

The creation of a cell for Market Research and Feasibility Studies within the Balochistan Chamber of Commerce and Industries, which is under active consideration, may help in the identification and realization of development opportunities.

LIST OF PROJECT PUBLICATIONS

BALAD

LIST OF PROJECT PUBLICATIONS

PLANNING SECTOR

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