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SUDAN REGIONAL FINANCE AND PLANNING PROJECT  
FOURTH QUARTERLY REPORT, 1983

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## GENERAL SURVEY

Reflecting the central project director's willingness to shift a substantial measure of responsibility and finance to regional project directors, SRFPP fund disbursements in the July-December period rose by LS 458,000, from LS 212,616 to LS 670,616. This represents an increase of 215.4 percent in six months. Fund disbursements in the past six months are more than twice as large as the total for the preceding 20 months.

Although LS 200,000 of the LS 458,000 went to Kordofan's Kheiran project alone, there was a substantial increase in funding for other project activities as well. Thus it is particularly unfortunate that the availability of the LS 100,000 transferred to the Equatoria project account was deferred temporarily because of a rupture in the Unity Bank's inter-branch transfer mechanism. As these funds did not become available until after the first of the new year, real project activities in the South did not match the release of project funds by the center.

Now that the constraint imposed on project implementation by the overly tight funding policies of the past has been eased, real resource and environmental problems are coming to the fore. At the regional level of government manpower and skill shortages inhibit implementation. Where departments are seriously unskilled and understaffed, as in Bahr El Ghazal and Upper Nile, cadre cannot be spared for longer term training, yet administrative deficiencies make organizing and presenting on-site short courses difficult. At the same time, existing skills in all target regions are not being effectively utilized.

In general political priorities take precedence over economic justification, and agencies, departments and ministries have difficulty in agreeing on common strategies and goals. In Kordofan these factors lie behind the evident difficulty there in designing and contracting the proposed resources inventory.

In all regions the lack of a supportive environment impedes project design and implementation. The lack of infrastructure, related enterprise and effective institutions are important factors in this regard. Because of these constraints design of the Juba Food Production project is challenging and the implementation of the Kheiran project has fully absorbed the capacities of Kordofan agencies involved. In view of these common problems of under-development, the work plans of Kordofan and Equatoria are ambitious.<sup>1/</sup>

#### AN ASSESSMENT OF PAST PROGRESS AND FUTURE POSSIBILITIES

Given the real resource constraints described above, future activities need to be more focused on plausible indicators of project goal attainment. The gap between available resources and the needs of decentralization is too great to justify involvement in peripheral activity.

One factor that has inhibited concentration on goal achievement in the past has been the lack of explicit project targets or benchmarks. The project paper and project agreement contain a few explicit targets but many areas of project activity are left without quantified benchmarks. In recognition of this problem, recent discussion between the USAID project manager and the chief of party has led to agreement on an extended list of project implementation benchmarks. Assuming that this list is officially accepted by the GOS and USAID early in the next quarter, it is presented here as a means for evaluating progress thus far and as a guide for future policy recommendations. Table 1 lists these proposed quantitative benchmarks (planning component only) for L.O.P. and attainments as of the end of 1983.

Considering US\$ funded items first, long-term TA potential has been underutilized thus far because for only 6 of the 26 months

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<sup>1/</sup> For the October 1983-June 1984 work plan of Kordofan see Appendix I of the Third Quarterly Report, 1983. For the January-June 1984 Equatoria work plan see Appendix I of the present report.

TABLE 1 QUANTITATIVE BENCHMARKS (PLANNING)

<u>U.S. DOLLAR FUNDED</u>	<u>Q<sub>4</sub> 1983</u>	<u>L.O.P.</u>
1. Technical Assistance		
Long Term (person months)	74	120
Short Term (person months)	1	20
2. Training		
M.Sc. (persons)	1	6
Short Courses (persons)	0	6
3. Planning Research		
Project Development Handbook (LS/\$)	0	1
 <u>L.S. FUNDED</u>		
1. Training		
Seminars and Workshops	5	12
Full Time Training (persons)	10	26
Total GOS Personnel Trained	114	200
2. Research		
Resources Inventory	0	2
Training Needs Assessment	0	1
Project Development Handbook	0	1
Research/Studies	1	9
Translations	1	13
3. Upgrading Training Institutions	0	2
4. Model Projects (Funding and Implementation)	1	6

of project activity has the four person advisory team been up to strength. Had the team been up to strength since the start of implementation in November 1981, long-term TA would have reached 104 person-months by December 1983. Even allowing for a gradual phasing in of the advisory staff this potential is underutilized. And, as the TA contract expires in October 1984, it is likely to remain so. Assuming that contractor activities end in October 1984, and the present staff of 3 is not increased to 4, the level of effort of the long-term advisors will only reach 101. The short-term TA position is even worse. As only one person-month out of 20 has been utilized thus far, it is clear that this category of assistance will remain essentially unused.

Experience suggests that M.Sc. and short course training may likewise be underutilized. Thus far only one M.Sc. candidate has been enrolled at the University of Pittsburgh. Concerning short courses in the U.S., the early indications are that language inadequacy may inhibit the full use of this potential.

Unlike TA and training benchmarks, which are given explicitly in the project agreement, the project development handbook is a newly proposed output intended for use at the area and village council levels of government. What is proposed is a simple, step-by-step, review of the process by which projects can be designed, appraised, financed and implemented at the lower levels of administration. Perhaps it is fair to say that this endeavor, if well done, has the best chance of all project activities of making a lasting contribution to the planning process at the lower levels of government.

Turning now to the LS funded benchmarks, the GOS training benchmark of 200 persons is taken directly from the project paper. At the present time, 114 Sudanese from all target regions have participated in project sponsored training courses, workshops or seminars. Assuming that a well conceived training strategy is implemented henceforth, this goal should be within reach. This will be explored in the next section.

Progress in the area of research is not satisfactory. Resources inventories need to be designed and implemented with the help of external expertise as necessary. A training needs assessment is underway in Equatoria, as are initial steps toward a project handbook. Thus there is at least a fair probability of success in these areas in the months ahead, assuming that these efforts are supported and augmented as necessary by Sudanese or external short-term TA. The project chief of party will undertake the writing of the study papers, of which one has been completed.

Plans to upgrade several Sudanese training institutions are now underway. It has already been agreed to assist the Regional Accountancy Training Center in Juba through tuition and support for participants in specific courses and through a general purpose strengthening grant. Grants to the Academy for Administrative Sciences and the Institute of Accountancy Studies in Khartoum are now under consideration.

The most serious deficiency is in the area of model projects. Only one, Kheiran, has been accomplished thus far and the norm is 6. Clearly this situation requires a change in tactics.

#### PROBLEMS AND SOLUTIONS

In this section, the problems and impediments presently constraining progress in each of the main areas of project activity will be reviewed and solutions suggested for each.

##### Training

In the field of training, insufficient command of English effectively screens out candidates for U.S. training who otherwise would be eligible, while the design and implementation of seminars and workshops at regional and area council levels of government is inhibited by manpower and skill shortages.

The use of U.S. short course opportunities can be accelerated by special remedial courses in English that can be arranged at the American Center. These include practice in taking the ALIGU test. Furthermore, greater use can be made of LS funds for suitable

short courses in neighboring countries for Arabic speakers. At present the project director is exploring the possibility of sending some planners to courses offered by the Institute of National Planning, Cairo.

To deal with the problems of in-country training, greater use must be made of local teaching institutions. This is being done in the case of the DSRC in Khartoum and the RATC in Juba. Ten persons have completed or are in the regional planning diploma course offered by the DSRC, while the RATC figures largely in the training plans of Equatoria. The strategy there is to use the RATC to develop skills in Upper Nile and Bahr El Ghazal which have special needs resulting from redivision. This approach can be applied to Kordofan and the center by arranging special courses with the DSRC, the Academy for Administrative Sciences and others. The availability of strengthening grants can make this attractive to the cooperating institutions.

#### Research

The problems in the research area are simply manifestations of underdevelopment. Organizing and carrying out resources inventories implies a level of sophistication that is not to be found in newly created regional governments. Representatives of interested ministries and departments have difficulty agreeing on what to do, how to do it and why it should be done. Similarly, the conceptualization, design, writing and implementation of a project handbook that could be used by lower levels of government in any and all regions is probably beyond the limits of local authorities and the regional advisory staff. Yet at the same time, we have an embarrassment of riches in the form of unutilized short term technical assistance that could be combined with Sudanese professionals to form teams that could accomplish both tasks. In effect, project resources are available to accomplish these tasks; the problem is one of matching means and ends, not a lack of means.

#### Model Projects

The time and effort that have gone into the Kheiran project suggest that the model projects benchmark will not be met unless new tactics are adopted. Kheiran, a relatively modest agricultural

endeavor, has absorbed fully the capacities of regional officials. Yet it has to be recognized that the skill and capacity levels of government vary directly with their level. The administrative capacities of government at the village and area council levels are in most cases less than those found at the regional level.

The solution proposed is to attempt to substitute popular interest and beneficiary commitment for official capacity to develop cost effective projects. Emphasis should be on small, income generating projects that are identified by the beneficiaries. Beneficiaries should be expected to contribute labor, resources or cash to meeting the project's cost. Based on the assumption that proprietary interest tends to assure commitment to success, the element of self help can be substituted to some extent for rigorous appraisals of costs and benefits. Rough estimates of cost effectiveness may suffice. This approach should be taken experimentally by establishing a projects fund for each of several target council areas. Project proposals would be invited from village councils, local notables or traditional leaders. A project screening process would then be employed to determine which projects would be supported by the SRFPF fund on a matching basis. This approach should be tried in conjunction with the preparation of the project development handbook. Alternative variations of the process could be tried and tested in actual cases in order to determine the most suitable one to adopt for the final handbook.

Evidently the capital absorptive capacity of regional government, employing the conventional methodology of the project cycle, is not sufficiently large to utilize the LS 2.5 million available under the SRFPF. Unless some experimentation of this kind is undertaken at the grass roots, this resource will not be fully utilized in the project life remaining.

David G. Edens  
Chief of Party

FOURTH QUARTERLY REPORT  
KORDOFAN REGION  
OCTOBER - DECEMBER 1983

In the last quarter of 1983 work began on several activities proposed in the region's work program. Among them were the design and organization of two in-country training courses, identification of overseas training opportunities and nomination of candidates, assignment and renovation of office space, and furnishing supplies and equipment needed by the Department of Planning. Significant progress was made with ongoing activities including implementation of the Kheiran Agricultural Project and on-the-job training provided in project planning.

NEW ACTIVITIES

1. The Kordofan Planning Advisor prepared a content outline for a short course in Needs Identification and Project Management to be conducted for District Council officials. Following general agreement between the Regional Director of Planning and the Sudan Academy for Administrative Sciences, the Planning Advisor met with trainers in the Economics and Planning Division of the Academy to exchange ideas and finalize a detailed course proposal. Objectives, topics, presentation approach, teaching materials, and instructors were agreed upon and a visit by an Academy representative to el Obeid in early January was planned to finalize arrangements. Because of a heavy course schedule at the Academy the course was scheduled to begin the last week in February.

2. With a general description of an introductory course for Department Directors and Director Generals in Regional Planning and Development provided in the work plan, the Chief of Party in Khartoum was able to work with instructors at the Development Studies Research Centre (DSRC), University of Khartoum in the development of a course outline to meet regional training objectives. The need for this course became increasingly apparent as a necessary precondition for establishment of project units in each of the regional ministries. Directors needed to be familiarized with the process of planning and informed about the significance of projects as part of the region's development strategy.

A draft of the course proposal was forwarded to the Kordofan Advisor for review and comment. In response a document was drafted suggesting several changes and adding some topics which were felt necessary for achieving course objectives. The Director of Planning met with people at the DSRC to discuss the course proposal and work out financial and logistical details. Unfortunately the two parties could not agree either on course content nor satisfactory arrangements for instructors and financial matter and negotiations were discontinued.

The Director of Planning contacted the Sudan Academy who expressed interest in conducting this course as well as the previous course in Needs Identification and Project Management. The Kordofan Planning Advisor, while in Khartoum in late December, was prepared to begin detailed discussions concerning this course with people at the Academy. After working several days on the contents of the Needs Identification Course people at the Academy felt that they had sufficient staff to only work on one course at a time and preferred to defer discussion on the Regional Planning Course until after the first course was completed. This was the first of several troubling indications that the Academy might be overextended in its commitments and not be an institution that could be relied upon to design and deliver the various courses desired for Kordofan.

3. The Kordofan Regional Government nominated a) six candidates from the Ministries of Finance, Agriculture, and Public Services to attend an 8-week short course in project evaluation at the University of Pittsburgh and b) six candidates from the Ministries of Finance, Housing and Public Utilities, to attend a 6-week course in budgeting and financial management at the same US institution. Because of a misunderstanding concerning the procedures for selection of overseas courses, submission of candidates, and other USAID/GOS requirements, the nominations could not be processed as submitted.

These were to be the first overseas training programs sponsored by the RFPP and as such had a great deal of significance attached to them. The project evaluation course was intended to provide intensive training to young men and women whose participation was conditional on their assignment by their respective ministries to the yet to be

established project units. The course would help to overcome two significant obstacles in the way of getting this critical element of the region's planning process into place. The problems of inertia and lack of trained manpower to staff the units could both be reduced by overseas training. Whether the correct procedures and requirements for overseas training can be formulated, communicated to the region, and complied with in time to get Kordofan's two candidates to attend the financial management course scheduled to begin in early March, is uncertain.

The problems experienced with overseas training demonstrate the need to outline and communicate the procedures and regulations that must be followed to the regional government. Such instructions should be in writing and should be accompanied by a statement of the objectives that overseas training is intended to serve. Deadlines, and required lead time for processing and receiving language test scores, letters of recommendation, and travel documents should be specified and kept to so that confusion and disappointment do not become by-products of this activity.

The Minister of Finance allocated a suite of offices which were formerly those of the Provincial Commissioner to the Department of Planning. Using project funds, the offices were renovated to improve lighting, ventilation, and their general appearance. Signs were painted and furnishings installed so as to create a conducive working environment. With a workable physical arrangement the various divisions into which the department had been organized began to establish office procedures, filing systems, and began assuming the responsibilities for which they were established.

The first shipment of supplies and equipment purchased by the DLRD for the Department of Planning arrived at the end of December. Included were calculators, office supplies, and a photocopy machine. A technician from the Ministry of Finance was selected for training in machine operation, maintenance, and repair and arrangements were made for him to leave for Khartoum where he would receive training at the workshop of the supplier. The Kordofan Planning Advisor planned to hold several brief training sessions on the use of the

desk model calculators. Policies and regulations governing the use of calculators and photocopy machine to prevent abuse were being drafted.

#### CONTINUING ACTIVITIES

Progress on two continuing activities was made which contributed in an important way toward achieving project objectives. The one "model project" which has gotten off the ground reached a "take off" stage whereby a number of obstacles to project implementation were overcome. The Kheiran Project received the second and largest installment of funds from the DLRD, bringing its financing up to the LS 250,000 level originally requested. However, with all funds at the disposal of the regional government several problems needed to be resolved to get the production units in operation for a summer 1984 crop to be planted.

The job of well excavation, construction, and installation of pumps and engines appeared to be too extensive and complicated for the Horticulture Department and the small project staff to handle by themselves. Conferring amongst themselves, the Ministers of Finance, Housing and Public Utilities, and Agriculture decided to contract the Rural Water Corporation to take on the entire construction task. Having made the decision it fell upon the director of Planning, Director of Horticulture, and Managing Director of the Rural Water Corporation to agree upon terms, cost, delivery schedule, specifications and other details.

Bargaining was complicated by the fact that the farmers who had already signed an agreement with the government needed to be consulted, as the original terms involved only supervision of construction by government. Labor was to be provided by the farmers. The new proposal aims at speeding up this phase of the project and ensuring quality workmanship. However, it would add significantly to the well construction costs - an expense that the farmers would have to pay back over a ten-year period.

A financial reappraisal was conducted based upon revised cost estimates and it was found that the return would still be attractive enough to satisfy the farmers. After negotiations an

agreement was reached and ten construction teams were moved into the field to begin excavation, concrete block production and masonry work. With one team completing a well in 20 days it was estimated that all wells would be finished and pumping by the end of February.

Relieved of a tremendous logistical, supervisory, and organizational burden, staff from the Ministry of Agriculture were able to concentrate on procurement of other agricultural inputs including fertilizer, seed, pesticides, fuel, implements, irrigation pipe, and tree seedling production. The resident horticulturalist's house was completed and furnished, a vehicle purchased, and as the quarter came to a close he was preparing to take up residence in el Bashiry town. A plan for technical assistance to the production units was in preparation as was planning for the timing, transport, and distribution of inputs to the production units.

The Project Director has begun to draw on the technical resources of the Western Sudan Agricultural Research Project. Discussions are underway with WSARP researchers to enable them to work with some of the production units for on-farm trials of new varieties and production techniques. Included may be some experimentation with drip irrigation as a water (and fuel) conserving measure.

With the Kheiran Project out of the nursing stage the Kordofan Planning Advisor and department staff were able to begin examining and trying to develop other project proposals.

1. A flood of small projects with self-help components have been submitted from all over the region. Most involve construction or renovation of schools or clinics, but others are of a more directly productive nature such as animal traction schemes and financing start-up costs of village based handicrafts production centers. As the American Ambassador's Self-Help Fund is overwhelmed with requests, some of these proposals are being further detailed and packaged for financing from other sources including the Dutch Embassy Self-Help Fund, and the EEC Micro-Projects Fund. Additional sources of local currency financing are being investigated including the possibility of using U.S. generated local currency for establish-

ment of a small projects fund administered by one of the established PVOs in the country such as CARE.

2. The possibility of more fully elaborating on one or two of the above project ideas and proposing them for financing under the model projects fund of the RFPP is being investigated. Especially promising is the animal traction program which adopts technological development and experience from an EEC Animal Traction Project in South Kordofan but makes it available to small holders who heretofore have been excluded due to high repayment costs for implements and animals. Also the establishment of a handicrafts cottage industry in a village nearby el Obeid is being examined. If given priority by the regional government, both proposals will be the subject of in-depth investigation in the months to come.

3. The Rashad District Infrastructure Project was brought to life once again with a request by the Minister of Finance to describe the manpower needs for a feasibility and design study. Since inter-ministerial cooperation is required, contacts are being made between the Ministers of Finance, Housing and Public Utilities, and Agriculture to assemble a team. Terms of reference for the work have been drafted and the appropriate participants, some who may have to be recruited from Khartoum, are being contacted.

All of the above project work has involved two Sudanese in the Planning Division of the Department. Officials in the other ministries and in some cases from outlying districts have also participated in project review sessions where the factual bases for the proposals were being established and technical issues or local conditions needed to be considered.

The need for a formal procedure whereby project ideas or requests are submitted, evaluated, and action of one sort or another is taken has become very apparent. Virtually all development projects now come through the offices of the Department of Planning at one time or another. There is a need to establish guidelines for the form and substance contained in such proposals, definition of the role of project units and departments in the other regional

ministries, as well as the local units of government in the various stages of the "project cycle."

For the present, all proposals that are screened and developed into projects are sent out for financing from external sources. The Department of Planning still must be linked into the formulation of the Development Budget. Work on establishing the necessary institutional and personal linkages for the department's work to be of consequence in allocation of development funds has already begun. By establishing and institutionalizing a project review process and training the people involved at its various stages, the department and other units of government will be in a position to effectively participate in the region's planning process when and if the present development budget process is modified to include technical analysis.

#### OTHER ACCOMPLISHMENTS AND DIFFICULTIES

1. Resource Inventory: Very little progress was made in moving the proposal for a natural resources inventory toward eventual implementation. Different objectives, views as to how the work should be done, and the frequent traveling schedules of key participants in drafting the documents made it difficult to sit down and work out these fundamental differences of opinion. A reduced version of the original proposal was drafted by the Kordofan Planning Advisor, which took in only the first, and rather non-controversial phase of the inventory, that is, a review of existing literature and research findings relevant to Kordofan. This proposal lacked the appeal of a larger and more ambitious undertaking and so failed to generate much interest among regional officials. The support of a newly appointed regional Minister of Agriculture will be necessary to get a workable proposal put together and so the issue will be put before him. People at the USAID Mission in Khartoum have been contacted concerning the types of technical expertise available in country to assist in design of the proposal, its evaluation, and execution of the resource inventory itself. Most people agree that this is something that will require outside assistance as the region does not have the training nor the experience needed to carry out such an activity by itself.

2. Meetings were held in Khartoum between the Kordofan Planning Advisor and USAID project managers responsible for other AID financed projects. The possibility of coordinating activities of those projects with the efforts presently underway to build up capacity in planning and administration at the regional level were discussed. In particular the Agricultural Planning and Statistics Project seems a likely candidate for providing assistance to the regional Ministry of Agriculture as they establish their project unit. In light of the training and technical assistance capability of this project, it was decided for the time being to delay design and execution of the course focusing on project planning as identified in the October 1983-June 1984 Work Program for Kordofan Region. The Agricultural Planning and Statistics Project has developed and begun to offer a series of short courses on the same subject. If Kordofan candidates can attend that series either in Khartoum, or preferably in el Obeid, then there would be no need to duplicate their efforts. The new Minister of Agriculture is expected to contact the Sudanese Director of that project to request training in project planning.

3. Three people from Kordofan who attended the DSRC Diploma Course in Regional Planning have graduated and returned to service in the region. All have been interviewed about their experience and efforts are underway to place them in positions that should be staffed by planners. One graduate will be joining the Department of Planning, and the other two have been proposed to staff the project unit in the Ministry of Agriculture. It is essential that individuals trained by the RFPP be placed in jobs where their skills can be of use in the region's evolving process of development planning.

4. After trying to persuade the regional government for some time that there needs to be an efficient and regular mail system between the regional and central government in Khartoum, such a system has finally been established. It is not clear what influence such advice had but in any case a system is now operational using scheduled light aircraft and a regional follow-up office in Khartoum. Improved communications can only help in carrying out planning and administrative functions in el Obeid.

EQUATORIA REGION  
QUARTERLY REPORT

OCTOBER - DECEMBER, 1983

The effects of creating the new regional governments, which came into being on July 1, were still being felt in October. The new Planning Director for Equatoria, Jino Gama, did not return to Juba until late September. He was a member of the committee responsible for distributing the physical assets of the former government among the three new regions. Although as Director of Statistics he had been a member of the Directorate of Planning, he was not familiar with the project scope, his only contact having been in specifying supplies and equipment for his department. However, by mid-October a Work Plan for Equatoria Region was prepared and submitted to the Project Director. The other regional governments had not yet moved all their officials out of Juba and in this stage of transition were not prepared to discuss project activities in their regions. Therefore no attempt was made to draft work plans for them. Furthermore, the RFPP had not dealt with the issue of how Upper Nile and Bahr El Ghazal regions might be assisted by the project.

A proposal was made to place an advisor in Wau, under the direction of and supported by the Juba advisor. This proposal was of course consistent with the original structure of the RFPP, which had provided for an advisor to serve Lakes and Bahr El Ghazal provinces. With the departure of the original Juba advisor in May, 1983, project activities in Bahr El Ghazal were limited to a planning workshop held in June in Wau. A qualified economist teaching at Juba University expressed interest in working in Wau and was acceptable to the Ministry of Finance in that region. The Director General was asked to submit a formal request for this person specifying his terms of reference. This was done, and the Project Director, Project Officer and Chief of Party concurred in approving him. Unfortunately, a decision was then made by USAID not to appoint a Bahr El Ghazal advisor and there has been no further progress on this issue.

Although no informal training programs were planned in the South during the last quarter of the year, it was agreed in principle that project resources would continue to be available for the training of staff from Bahr El Ghazal and Upper Nile Region. The Project Director invited five officials from each of the three southern regions to participate in in-service courses in the central Ministry of Finance, Khartoum. All regions would also receive supplies and equipment for the Directorates of Planning. However, to date it has not been possible for the Juba advisor to contribute to the establishment of the new planning offices in Wau and Malakal.

In early November LS100,000 was released in Khartoum for the project account in Juba. Although this account had been opened almost one year earlier no funds had ever been released and this event was viewed as a great step forward in granting some degree of local control over project activities. This euphoria was short-lived, however, as shortly after a few expenditures (3 motorbikes, and support for the 3 MFEA participants in the in-service course in Khartoum), the Juba branch of the Bank of Sudan stopped any further payments pending approval from its Khartoum office. Unfortunately this impasse was not resolved until January 1984, effectively stopping most project activities for the remainder of the quarter. The inability of the parties concerned in Khartoum and Juba to solve this problem in a timely manner illustrates the difficulties which can be encountered in seemingly routine transactions. The Ministry of Finance in Juba was forced to use its own funds to cover the project expenditures which had been made. The momentum which had been generated in developing the work plan was all but lost.

#### TRAINING

A staff evaluation of the Department of Planning was initiated in December. Not including the Director, the Department has 13 planners, three of whom are on formal training courses. Another planner is on secondment to an external assistance agency, leaving nine planners in the Department. Five of these are recent college

graduates with little work experience. Of the remaining four planners, one is being sent to the Department's Provincial Office in Yambio. Two of the remaining three planners have about three years experience and do most of the day-to-day work of the Department. The remaining planner is new to the Department but worked in the Department of Finance for four years. The organization of the Department is almost the same as before creation of the new regions. A staff training program is being developed and will include the Division of Statistics.

The two M.Sc. nominees from the Department of Planning traveled to Khartoum in November to take the TOEFL examination, a prerequisite for admission to American universities. Subsequently, one of the nominees was accepted in the Graduate School of Public and International Affairs at the University of Pittsburgh and left Juba in late December to enroll for the winter semester. The other nominee is hopeful of being accepted for the fall term of 1984, and is still in the process of filling out admission applications. A third staff member is continuing in the diploma course at the Development Studies Research Centre, University of Khartoum.

In late December three staff from the Ministry of Finance and one each from the Ministries of Agriculture and Administration were sent to the Central Ministry of Finance in Khartoum on an on-the-job training program. They were assigned to relevant departments to learn about Central Government operations and to meet the officials with whom they would have working contact in the future. The program was proposed to last one month for four of the participants and two months for the fifth.

In November the Ministry of Administration and Regional Affairs held a four-week workshop for 32 executive officers from Area Councils of all three regions. The Directorate of Planning was asked to participate in this workshop, which covered issues concerning administration, finances, local government functions

and development. Because of the short notice the Directorate could not provide speakers from its staff, but the Juba advisor agreed to hold sessions concerning planning, goal setting, development policy, and analysis of costs and benefits. The executive officers in this particular workshop were generally in their mid- to late twenties. They must possess a secondary school certificate to qualify for their positions, and some have university degrees. Upon acceptance into the Ministry of Administration and Regional Affairs, they attend a one to two year course in Khartoum prior to their posting at the local level. Workshops are designed to deal with very practical issues which they encounter in their work. The planning session, for example, was intended to describe the basic steps in the planning process. Methodology and its rationale were stressed but in a very unsophisticated manner. The methodology was explained with real-life Sudanese examples wherever possible. Handouts and visual aids were used in an informal classroom setting. The planning paper presented is contained in Appendix II as an example of the level of delivery for these officials. This paper was also presented at the project workshop held in Wau in June.

#### RESEARCH

The Project Preparation Guide, which will explain the forms and procedures used by the Ministry in evaluating project proposals, was initiated with a major revision of the Project Identification Proforma. This document, to be distributed to all Ministry Planning Units and to the area/town councils, has been organized in a planning format rather than purely a budget format as before. It will be the main topic of the Guide, as it requires a rigorous documentation of the planning process and the proposed projects. The Guide is expected to be completed early next year.

Other research activities scheduled were the purchase of periodicals and references, a regional project evaluation tour, and a document search. None of these was initiated in 1983 and all are included in the work plan for January-June 1984.

## MODEL PROJECT

Several discussions were held with planning staff of the Ministry of Agriculture to formulate a strategy for designing a crop production scheme - the model project which was initially proposed by the Juba Central Area Council in February 1983. The MOA's strong advice was to proceed cautiously, as the region is replete with failed and struggling production schemes. They suggested that design not proceed until a number of studies were made, in particular evaluating past projects and building up a data base on agricultural activities in Juba District. The MOA had developed expertise in conducting field surveys on a district basis, and this approach was agreed upon for Juba District. Consequently, a research program was jointly designed and experienced MOA personnel were assigned to do the work on a contract basis with the RFPP. An A/Inspector from the Department of Planning was assigned to participate in all the field work as a training exercise for him and to keep the department apprised of survey problems and progress. The field work will start in early January.

An interministerial team visited a vegetable garden run by the Juba Area Council to evaluate its organization and production. This was the only evaluation to be completed in December, with the other projects scheduled for evaluation in January-February 1984.

The Ministry of Agriculture initiated production of base maps for Juba District using satellite images. The methodology had been developed in conjunction with the district agricultural surveys since existing maps are 25 years old or more. Settlement patterns, roads, hydrology, topography, and land use are discernible on the images but require a substantial amount of ground checking. These maps are expected to be finished in time to be of use in the model project proposal.

## PROCUREMENT

Supplies and equipment per the list submitted by the Department were purchased in Khartoum in November. However, by the end

of the year no arrangement had been made to get them to Juba. The Department had preferred to purchase as much as possible locally because of the chronic transport bottleneck, but it was decided to purchase all supplies centrally to minimize the unit costs. It is hoped that the items purchased will appear in Juba as expeditiously as possible.

#### 1983 AND 1984

In retrospect, 1983 has been unsatisfactory in terms of the accomplishments of the Project in the South. Efforts in training were reasonably successful but the other Project components moved slowly and at times not at all. In fairness, however, there were mitigating circumstances certainly beyond the control of the project team in the South if not in Khartoum. The Juba advisor left the project in April, necessitating the relocation of the Rumbek advisor to Juba and consequently a cessation of most Project activities in Bahr El Ghazal. The Project Director, in the face of very unsatisfactory working relationships with the advisors and officials in Juba, retarded several activities prior to his own departure in mid-year. The creation of three new regions to replace the southern regional government became official on July 1, and was preceded and followed by much uncertainty, confusion, shifting of personnel, and general governmental inactivity. This transition period lasted for about four months, after which most of the new personnel assignments had been made. However, several of the top administrative posts have not been confirmed, so that more changes are possible.

By October, the new Director of Planning was able to get more involved in the project, and his leadership and vitality sparked the enthusiasm of his staff and the advisor. A completely new role emerged for the latter, as he was brought into the mainstream of department activities as a technical liaison between the Director and all the staff. Heretofore, advisor contacts had been for the most limited to the two counterparts. Changes are being made in the procedures for budget preparation,

which will be the major task of the Department until April or May. At the same time, six of the nine staff members are directly involved in Project activities. Of the remaining three, one will be sent to Yambio to man a planning office there and two are in the External Assistance section. The advisor will assist this section in revising its forms and in visiting the 40 or so agencies operating in Equatoria Region for the annual External Assistance Report.

In view of the present leadership in the Department, the prospects of accomplishing project goals appear very promising for 1984. If cash flow snafus such as recently encountered can be avoided, project resources will play an important role in enabling the Department to perform its tasks.

APPENDIX I

## EQUATORIA REGION

### WORK PLAN - JANUARY-JUNE 1984

Most of the activities in this Work Plan are continuations of activities initiated in 1983. This plan proposes training sessions which will be open to participants from Upper Nile and Bahr El Ghazal Regions. It is noteworthy that several of these sessions will be designed and conducted jointly with two UNDP programs - one in the Ministry of Finance (the Regional Accountancy Training Center) and one in the Ministry of Administration and Regional Affairs. Both of these programs are primarily concerned with training in the fields of financial management and administration. The planning emphasis of the Regional Finance and Planning Project complements these programs in providing training for the same client group. This inter-program cooperation is considered essential if the various training activities are to be of maximum benefit.

Most of the research activities proposed in the previous plan have not been undertaken. Several were initiated in December and will be continued until completed. The Model Project also moved more slowly than anticipated, in part because of the Ministry of Agriculture's caveat to proceed cautiously considering the high rate of failure of agricultural projects in the past. Procurement seems to have been satisfactory although coordination between Khartoum and Juba should be improved.

The activities proposed for this plan period are described in detail below. The budget and schedule are attached.

#### TRAINING

Two of the staff of the Directorate of Planning are being supported in formal coursework by this project. One is in a diploma course at the University of Khartoum, Development Studies and Research Center. He will continue in this course throughout the plan period. No expenditures are anticipated as his support is provided in Khartoum. The other staff member has been accepted in

a two-year Masters Degree program at the University of Pittsburgh. His support is arranged by the contractor in the United States and will also not require any expenditures from Juba. As three of the 13 planners in the Directorate are now enrolled in long-term courses and one is on secondment until August, no further formal training programs are planned in this period.

Two of the Directorate of Planning staff and one from the Directorate of Finance are engaged in on-the-job training in the Central Ministry of Finance. In addition, one man from the Ministry of Agriculture and one from the Ministry of Administration and Regional Affairs have been sent to their respective central ministries. All five officials are expected to complete their training by the end of January. No funds are budgeted for their support, which has been arranged in Khartoum.

The Ministry of Administration and Regional Affairs has scheduled a five-week course starting late January. All the Chief Executive Officers from Equatoria and three each from Bahr El Ghazal and Upper Nile will attend as will three education officials from Equatoria. The Directorate of Planning will hold sessions concerning local level planning, the use of statistics and the preparation of the development budget. Funds are needed for preparation of course materials and a portion of the support for the attendees.

A course on project management, to be sponsored jointly by the Directorate of Planning and the Regional Accountancy Training Center (RATC), is proposed to begin in March and would run for three months. Attendants would be regional officers engaged in development projects and managing enterprises, including representatives from the private sector. The Directorate would be responsible for sessions on development economics and the project cycle, with the emphasis on planning and budgeting. Funds are needed for lecturers, course materials, and a portion of the subsistence for the attendees. The course would be held at the RATC. The client group would be officials from the regional ministries and persons in the private sector who are responsible for managing development projects.

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The Department of Statistics has a small computer which could be utilized to store data and perform analyses as required. The computer could also be used in budget analyses by the planning staff. Unfortunately none of the staff has been trained to use the computer, which should be an integral part of the Directorate's activities. Funds are needed for a long-term advisor to determine how the computer should be utilized by the Directorate and to train local staff in its use. It is expected that it will be necessary to send at least one of the staff abroad to learn programming and computer usage in a planning environment. Most of the required funds would therefore be in hard currency. Further specification for this plan item cannot be made until a preliminary assessment is done by a qualified computer consultant.

A study tour looking at local and regional organizations in a variety of settings would be of great benefit to the senior officials of the Directorate of Planning. It is anticipated that two officials would go for two or three months, visiting relevant organizations in developing and developed countries. Because of the contractor's wide experience in a variety of planning environments they could tailor such a tour to meet the needs of the Sudanese officials. No local currency expenditure is planned for this item at this time.

Finally, it is expected that the Directorate of Planning will collaborate with the Ministry of Administration and Regional Affairs on a second course for Area Council officials toward the end of the plan period. This course has not been designed as yet but funds are requested in anticipation for course materials and support of the attendees. Detailed planning for this course should commence during March or April.

#### RESEARCH

Work on the Project Preparation Guide, which was initiated in December, is expected to be completed in January. A lecturer from the University of Juba was retained to assist in the preparation of

the guide. Funds are budgeted to meet the consultant's expenses and to produce a large number of copies of the guide. This item was budgeted at LS25,000 in the previous Work Plan but no funds have been spent as yet.

The previous budget item of purchasing periodicals and publications for the Directorate Library is repeated in this plan. Materials to provide a proper library/document room will also be purchased.

The staff evaluation initiated in the previous plan period will be completed in January. No expenditure of funds is expected for this item, which will include a staff training schedule.

The previous work plan described the need to do an evaluation of all the projects in the region which are receiving development funds. This essential activity was barely started in December and is now continuing. It is expected that it will require several months to complete depending on the availability of vehicles, fuel and staff. Funds are budgeted for these transport costs and per diems.

Finally, the review of existing studies and reports for inclusion in the Directorate Library as planning references was not initiated as proposed in the previous work plan. This activity is again included and funds are budgeted for a short-term consultant to do a document search, review the documents and recommend how the information collected can be used in the Directorate' programs.

#### MODEL PROJECT

The basic studies which will lead to a proposal for funding of a model project will continue for most of the plan period. In view of the plethora of unsuccessful agricultural projects the Directorate has decided to proceed very carefully in the project design stage. This approach has been strongly suggested by the Ministry of Agriculture, whose staff are conducting the ongoing studies with Directorate participation. Funds are needed to support these studies (primarily field surveys and project evaluations) and to prepare the proposal, which hopefully will be done by the end of the plan period.

The Directorate strongly feels that a fund removed from regular Ministry access would be of great benefit in assisting self-help projects. Such a fund would be administered through the existing project account and would assist in the completion of many small-scale projects which are abandoned for lack of cash to purchase essential items. Typical are schools, health care centers, community development centers, etc. Most of the amount requested would be designated to assist Area Council projects, which at present are not receiving any assistance from the regional government due to the chronic shortage of funds. This proposal would provide a reliable source of funding, foster planning links between regional and local levels of government, and result in the completion of much needed projects which have virtually no hope of receiving assistance from existing sources.

#### PROCUREMENT

It is assumed that the items requested in the previous work plan have been purchased in Khartoum. Funds may be needed to ship them to Juba. Funds are also requested to purchase two Suzukis, a 7½/10 KV generator for the statistics office (needed to run the computer and air conditioner), and a statistics office block in Torit. The Directorate plans to place staff in Yambio and Torit, the provincial capitals.

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BUDGET

TRAINING

LS 55,000

CEO 5-week course	10,000
Project Management course	35,000
Area Council officials	10,000

RESEARCH

20,000

Project Preparation Guide	10,000
Periodicals and Publications	2,500
Regional Project Evaluation	5,000
Review of Existing Studies	2,500

MODEL PROJECT

187,000

Continuation of Base Surveys	35,000
Preparation of Proposal	2,500
Self-Help Fund	
Regional	50,000
Area Council	100,000

PROCUREMENT

Supplies and Equipment	25,000
Shipment Khartoum to Juba	10,000
Two Suzukis	
7-10 KV Generator	
Office Block in Torit	

APPENDIX II

## REGIONAL AND LOCAL PLANNING

Planning is the process of allocating resources to achieve desired goals. We all plan constantly, making decision on how to use our time, money and possessions. We plan for tomorrow, next week, next month and sometimes for longer time frames. We constantly change our plans, especially in the short term. As we receive new information about our surroundings and the activities and people around us we make new decisions about what we want to do.

This simple example of planning in our everyday lives also describes what we mean by planning as a major undertaking of government. At both the regional and local levels, government is charged with the responsibility of determining how scarce resources should be used in order to produce desired changes. However, the task is much more complex, for government planners must consider many more variables and interrelationships than we do as individuals. How can this simple concept of planning be expanded to describe the methods planners use in their important task? Let's examine the steps involved in planning to see how we progress from where we are to where we want to be. These steps are fundamental to planning at all levels - national, regional, and local. The primary difference between these levels of planning is precision. As we shall see, planning necessarily becomes more specific as we move from the regional to the local level.

The first question planners ask is "Where are we? What resources do we have and how are they being used? Answering this question gives us a baseline, which is the planning term, for all the information we can assemble on the existing situation. Included are aspects of the natural environment, socio-economic environment, and how they interrelate. The natural environment includes the following types of features:

(Regional-Local)

1. Land uses
2. Soils/Geology
3. Hydrology

4. Mineral resources
5. Climatic zones
6. Wildlife
7. Forestry
8. Habitat types
9. Environmental degradation, e.g., erosion, desertification, pollution.

In order to use these resources wisely it is necessary to know their location, areal extent, and quality. This information is best presented on maps which are usually produced from aerial photographs and on-the-ground reconnaissance. Producing the maps can be a very costly operation and they must be updated regularly. Most of the base maps for the southern region were produced more than 40 years ago. Stream courses, roads and villages have changed so much that these maps are of little use today. There is a group of planners in the MOA which is producing new base maps from satellite images. Unfortunately only a few districts have been mapped so this remains a major constraint to planning, especially at the local scale.

The socio-economic environment includes man and all the features he has produced. Obviously it is essential to know how many people there are, where they are located and what they are doing. A list of basic socio-economic information would include the following:

1. Demographic Data: birth rate, death rate, family size, education, health, marital status
2. Economic Data: Income, employment, production, government revenue and expenditure, retail trade
3. Infrastructure: Schools, clinics, roads, water, electricity, sanitation, recreational facilities
4. Housing: Type, quality, size, location

Demographic data will soon be available from the recently completed census. The Social Monitoring Project will also provide information, particularly on the availability of social services and basic infrastructure. Area Councils should become familiar with both of these sources. Employment is included in the census but the other economic data would require special surveys.

Infrastructure is included in the Social Monitoring Project. Housing information is not now generally available but will in part be provided by the census.

Although all the above information is necessary to understand the existing situation at both the regional and local levels, I am not suggesting that the first 10 years must be spent in compiling data only. Planning can proceed for priority concerns while basic research is being conducted in other areas. For example, evaluating the adequacy of the educational facilities could probably be done quickly and easily and planning could proceed to meet the identified needs. Meanwhile, studies related to environmental degradation could involve years of research by specialists who would make recommendations for action at both the regional and area council levels.

There are two basic ways to collect data: through rapid reconnaissance and through sample surveys. The reconnaissance could be done in those areas mentioned previously with detailed studies done in those areas which the reconnaissance indicates are particular problems. An area which has always had plenty of water would not assign high priority to expensive hydrological investigation. This raises another important aspect concerning data collection. Most of the features in both categories (natural and man-made), are variable while some are non-variable. Examples of the former are land use, wildlife, environmental degradation and all of the demographic and economic data. All these things change over time - some very rapidly. This change becomes extremely important to the planner - he must know what the trends are and what causes them. Therefore it is necessary to collect data on these items at frequent intervals. Usually a planning agency will have a unit responsible for keeping current information, analysing it, and reporting the trends to the planners. The non-variable data either do not change at all (soils, geology, mineral resources), change very slowly (hydrology, climate, habitat types) or change in easily measureable increments (infrastructure). Those that don't change obviously only need to be examined once, provided a thorough study is made. Changes in the natural environment usually occur over

several years, while the infrastructural changes can easily be recorded when they are made.

So, now we have a good data base. We know what our resources are and we have some ideas about the more obvious problems which demand our attention. Where do we go from here? We have to determine how we want to utilise our resources to bring about the changes we feel are desirable. These changes must be economically feasible, technically possible, and socially desirable. Before we can specify such changes we must have well-defined goals in mind. The setting of goals, then, is the second step in planning. Goals are statements of how we want our society to function. It is crucial to involve the public in the setting of goals so that there will be public support for the plans we make to reach these goals. In the Sudan the Sudanese Socialist Union, the Village Development Committees and the Area Councils themselves all provide opportunities for the exchange of ideas on goals. At the regional level, the goals are less likely to involve public debate since regional goals are for the most part more general, at least spatially. At the district level, the goals will be quite specific and will be easier to respond to for the public. A regional goal might be to improve feeder roads in agricultural areas, whereas at the district level a goal would be to improve the Gogrial-Wau road.

The setting of goals is done in the light of the information we have gathered in the first step. Our infrastructure survey has told us that the Wau-Gogrial road needs so many bridges and culverts, filling in of holes, and grading. The survey might also tell us how many vehicles use the road every day. If we have enough information like this, we can assign priorities to our goals. The Wau-Rumbek road, as a regional road, would receive greater priority in planning at the regional level than would the Wau-Gogrial road. However, in Gogrial district, it could well be the highest priority in terms of transport needs.

In education, Gogrial District could have a goal of one elementary school per 150 students and one senior secondary school per 100 students. How do we choose between these goals in terms of priority? Which is more important? One way to determine this is to compare each goal to our baseline data. Our surveys tell us that we have one elementary school per 250 students and one senior secondary school per 300 students. We could decide that since we are closer to our goal in elementary schools, the senior secondary schools should have higher priority, at least until the number of schools is closer to the stated goal. At this stage of development in the southern region, goals should be set to reflect the minimum acceptable level of performance. It does no good to propose tarred feeder roads or schools with gymnasiums. The goals we are setting define the basic needs of the people in terms of government services, economic activities and living conditions, while recognizing the need to protect the natural environment.

Goals are set concerning natural resource utilization, certain demographic characteristics (e.g. birth and death rates, family size), infrastructure and government services, economic activities, and housing. The next problem is how to compare goals from category to category. How do we determine whether it is more important to improve the water supply or build schools? The method indicated earlier could also be used here, comparing base-line data to the stated goals. However, it must be recognized that some categories are more basic than others. Clean water, food, shelter and good health must be considered of greater importance than roads or electricity. Of course, all these things are inter-related, so it is a very difficult task to evaluate them separately. The better our data and information base the better this task can be performed. The setting of goals is probably the most difficult task in the planning process. It requires public participation, political guidance, and a thorough understanding of the existing conditions. Goals must be clear, precise and realistic. Priorities must be established and conflicts between goals resolved.

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Now that we know where we are (base line) and where we want to be (goals), we can begin to develop alternative programs of action to reach these goals. The third step, then, is identifying alternative plans. In education, for example, one plan might be to build a secondary school every two years and remodel the existing primary schools to increase their capacity. Two streams of students in every school could be an alternative, reducing the need for new buildings. There might be several approaches to locating the schools, to their size, pupil-teacher ratio etc. Plan alternatives should be different enough to enable comparisons to be made. Minor variations do not constitute alternatives in this sense. A given plan can contain some sub-options, which can be fine tuned later. An alternative is a policy approach which affects the cost, rate of implementation, quality and/or quantity of the item we are planning for. All these attributes can be measured. A complete planning report will present alternatives, ranking them in terms of preference, and also describe what alternatives were rejected and why.

A plan can be developed for almost any of the units of data collection which were listed in the first step. These are called sector plans, and they focus on a specific issue, such as agricultural production, or even a subset of that issue, such as dura production. A plan could also be done on a geographical basis, such as a Comprehensive Plan for Yirrol District. This plan would include all the sectors relevant to that particular area. In the United States, regional planning is usually done on the sector basis while local planning is area based, usually political subdivisions. Some sectoral plans are also area based, utilizing either political or natural boundaries. An example of the former would be a housing plan for Wau, while the latter might be a water utilization plan for the Jur watershed.

The planning report must also contain some type of cost-benefit analysis, which is step number 4 in the process. This analysis provides the measurements just mentioned. Direct costs are the easiest to identify, being the total of all the land,

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labor and materials required to implement the plan. Costs are usually only general estimates in this stage of planning, although the more accurate the better. Indirect costs are incurred as a result of plan implementation. Road improvements may require lengthy and difficult detours during construction, raising the transport costs of the road users. One school plan may require some students to travel long distances, perhaps making it impossible for them to attend regularly and thus affecting the quality of the education they are receiving. Planning for the expansion of domestic animal production may result in a reduction of wildlife. Any use of land precludes its use for other activities. This is called opportunity cost. Building a facility on good agricultural land reduces the resource base of the district. Putting a road through a forest means a measureable loss of trees and could also mean easier exploitation of the forest. This could be a cost or a benefit, depending on whether the goal is to preserve the forest or utilize it.

Cost-benefit analysis must look at all the impacts of plan implementation, describe them as precisely as possible, and quantify them, again where possible. Many impacts will be of a qualitative nature and therefore very difficult to quantify. Trees and wildlife have esthetic value but no one has been able to express this in terms of pounds. Community pride is another example - it is certainly a desirable state but impossible to quantify. How much is a recreation field worth to those people who use it regularly? The concept of cost-benefit should be applied as broadly as possible to include all impacts. Costs and benefits may also change with time and/or because of other improvements. An example of the former is a road from village to village, which gradually leads to increased agricultural production in the area between the villages because of improved access to markets. Such a benefit is impossible to count except as a potential in the road plan, but could ultimately prove to be the major impact of the road project. Conversely, the road through the forest could lead to the destruction of a resource that takes many years

to renew. In our school example of a few minutes ago, a bus could solve the transport problems of the most distant students so that school location need not be a detriment to their education. A plan for mass transit would be a benefit to almost all government services, making them more easily accessible.

We now have alternative plans with cost-benefit analyses to assist in the next step, which is plan selection. In democratic countries, plan selection is the responsibility of the political process. The planners must present their findings and hope to influence the decision makers, but have no guarantee of being able to do so. In fact, plans are not necessarily selected on the basis of cost-benefit analyses. The most efficient and most effective plan may be rejected for political reasons. This is a reality which the planner must recognize, and it is in his interest to be aware of likely conflicts. At times he may feel compelled to challenge existing policies by proposing a new approach to reaching the goals. He may even find after going through these steps that a goal is not realistic, or is unfair to a segment of the population or is unacceptable for some other reason. Thus his plan may include a change in the stated goal. In plan selection the planner must use his communications skills to convey his message effectively.

Once the plan has been selected it moves to implementation. Projects are identified to meet the goals of the plan according to the timetable which the plan should include. The project cycle is the subject of a separate session and will not be discussed here. It should be noted, however, that the results of the project evaluation must be used in plan evaluation - particularly steps 2, 3 and 4. Project evaluation may lead to goal modification, the identification of new alternatives and better cost-benefit analysis. A plan should not be considered a work of art, like a novel, to be read once and shelved. It is a living document, perhaps requiring changes, certainly requiring renewal in time. A plan for educational facilities may be needed every 5 years and for roads every 10 years. The last regional plan was for a 6-year

period but future regional plans will probably be for shorter periods because of the difficulties in making economic forecasts.

In closing, I would like to mention a few of the more common planning pitfalls I have encountered.

The first is what I call the 'boundary syndrome'. Of course, an area council, just like a regional government, is responsible for a political jurisdiction, nothing more and nothing less. The boundaries are easy to see on the map if not on the ground. However, that does not mean the council planner should be completely oblivious of what's going on across that boundary. Money can be wasted by not coordinating the planning of facilities which affect other districts or regions. Roads are the most obvious example. Another would be the utilization of water resources. Water catchments in the district will obviously affect water supply in downstream districts. It is also possible that providing a facility in one district may invite utilization by residents in other districts. This is very common today in schools, where students go to any school which will accept them. Obviously this can play havoc with facilities planning, and policies need to be established concerning the use by non-district residents.

Second, planning in the southern region has been characterized by over-commitment and over-estimation of resources. The regional plans have never been able to be realized because of the financial problems about which we all know. The districts are going to have to do better in estimating revenue generation and the ability to absorb new projects.

Third, planning at the district level must include activities of the regional and central governments as well as external assistance. District planners must be familiar with these projects and should be involved in the planning of new ones. Often such projects are the largest employers in a district and to exclude them from the planning process makes no sense. The same

is true of the regional planners, who must incorporate nationally and externally funded projects in their planning.

I have emphasized planning at the district level, but as I stated initially the process I have described applies to the regional and national levels as well. I believe planning at the district level is the most difficult, because there is no place to hide. The regional planner can say "we must increase dura production in the region." He could even specify a province. But it is the district planner who must make the hard decisions on precisely where and how this is to be done. Of course he should receive assistance from the regional planners. For the most part, however, the locational decisions will be made at the district level, and it is the district which will be most directly affected by the successes and failures.

John M. Miller  
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June 3, 1983

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APPENDIX III

GRANT ALLOCATION BY FORMULA:  
SOME IMPLICATIONS AND PRELIMINARY FINDINGS

The preceding Third Quarterly Report contains a paper, which proposed among other things, an illustrative formula for allocating central grants among the regions.<sup>1/</sup> The purpose of the present paper is to assess the impact a formula approach might have on the grant allocations now being received by the various regions. In doing so, it should be acknowledged at the outset that the data available for this purpose are incomplete, of dubious quality and, in some cases, at odds with similar information from other sources. The results, therefore, should be thought of as only provisional indications of probable effects. Even so, exercises of this kind are necessary if steps toward a more objective and equitable allocation process are to be seriously considered by the authorities.

Grants Formulas

The grants formula proposed in the previous paper combines three allocative elements to which distributive shares were assigned. The main element was a formula for allocating funds on the basis of population weighted by per capita income. Population and income are universally recognized as the prime factors to consider in appraising state or regional need for central government assistance. The larger the population of a region, in relation to that of other regions, the greater will be its justification for central assistance, unless offset by relatively high per capita income. The presumption is that the higher is per capita income in relation to the national average, the better able a region should be to finance its own activities from its own tax base.

The earlier formula also included elements for rewarding revenue effort and development effort of regional governments. To give the central authorities a measure of control over the outcome a share of 80 percent of the total grant was assigned the main population and income element in the illustrative example, while the other

<sup>1/</sup> David G. Edens, "Economic Considerations in Decentralization Policy," Sudan Regional Finance and Planning Project, Third Quarterly Report, 1983 (Development Alternatives, Inc.), Appendix III.

elements were assigned 10 percent each. These proposed shares are policy variables and are not an essential part of a grants formula; the outcome could have been left to the workings of objective factors in a suitably constructed formula.

At this writing, reliable information on development spending and tax effort are not available for enough regions to contribute to a meaningful test of the allocation impact of the complete equation presented in the prior paper. On the other hand, some interesting data on population and per capita income in rural northern Sudan have recently been published and are well suited to formula testing. These data are discussed in the next section.

Given the lack of tax and development effort data, this inquiry is restricted to the main elements of population and income. Extracting from the earlier paper, the formula now is

$$A_i = G \frac{P_i (1.0 - 0.5Y_i/Y_t)^2}{\sum P_j (1.0 - 0.5Y_j/Y_t)^2}$$

where G is the total grant to be allocated,  $P_i$  is the population of the  $i^{\text{th}}$  region,  $Y_i$  is the per capita income of the  $i^{\text{th}}$  region and  $Y_t$  is the per capita income of the nation. The denominator is the sum of these expressions for all regions.

This is the Hill-Burton formula used by the U.S. federal government for allocating unconditional grants-in-aid to the states. In this formulation grants are allocated on the basis of population, weighted by relative per capita income. The formula has the effect of increasing the weights sharply as regional per capita income declines.

In the analysis that follows, the results of an alternative formula are also provided for purposes of comparison. This is a simpler formula that provides allocation on the basis of population weighted by the reciprocal of relative per capita income.

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This formula is:

$$A_i = G \frac{P_i (Y_t/Y_i)}{\sum P_j (Y_t/Y_j)}$$

where G is the total grant to be allocated,  $P_i$  is the population of the  $i^{\text{th}}$  region,  $Y_i$  is the per capita income of the  $i^{\text{th}}$  region and  $Y_t$  is the per capita income of the nation. The denominator is the sum of these expressions for all regions.

### Regional Data

A recently published UNDP/IBRD study, prepared for the Ministry of Finance and Economic Planning, provides some rural family income and population estimates for eleven provinces of northern Sudan.<sup>2/</sup> These data are presented in Table 1 and are consolidated on a regional basis, in order of population size, in Table 2.

It should be noted in using these estimates that rural income and population data by region give only a partial measure of regional income and population. The urban elements could substantially alter the picture where there are large towns or cities generating incomes based on higher productivity industrial or service activities, rather than on agriculture. While conceding this, the purpose of this exercise is to begin to compare grant allocation outcomes provided by different formulas or distributive devices, given some suitable income and population data, rather than attempt to measure income and population precisely. Should adding urban income and population to rural elements raise their levels without much altering the relative positions of regions, their relative positions in grant outcomes would also be little changed. In these formulas what matters is a region's relative income and population position, not its absolute levels of income and population. As Khartoum is not included in these tests, it is plausible to suggest that relative regional positions would not be substantially changed by the use of total regional income and

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<sup>2/</sup> The Democratic Republic of the Sudan, Ministry of Finance and Economic Planning (Planning), Rural Labour Study in Northern Sudan (UNDP/IBRD, Planning Assistance and Training Project, Khartoum, 1983).

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TABLE 1 RURAL POPULATION AND INCOME BY PROVINCE, 1981

<u>REGION</u>	<u>PROVINCE</u>	<u>POPULATION</u>	<u>ANNUAL PER CAPITA INCOME (LS)</u>
CENTRAL	BLUE NILE	954,924	277
	GEZIRA	1,863,688	185
	WHITE NILE	1,182,130	206
DARFUR	N. DARFUR	932,813	199
	S. DARFUR	1,069,795	218
KORDOFAN	N. KORDOFAN	1,095,822	265
	S. KORDOFAN	815,483	200
EASTERN	KASSALA	794,949	185
	RED SEA	143,020	135
NORTHERN	NORTHERN	362,884	160
	NILE	474,412	181

SOURCE: The Democratic Republic of the Sudan, Ministry of Finance and Economic Planning (Planning), Rural Labour Study in Northern Sudan (UNDP/IBRD), p. 57 and p. 94.

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TABLE 2 RURAL POPULATION AND INCOME BY REGION, 1981

<u>REGION</u>	<u>POPULATION</u>	<u>ANNUAL PER CAPITA INCOME (LS)</u>
CENTRAL	4,000,742	213
DARFUR	2,002,608	209
KORDOFAN	1,911,305	237
EASTERN	937,969	177
NORTHERN	837,296	172
TOTAL	9,689,920	210

NOTE: Regional rural population is the sum of province rural populations. Per capita incomes are the sums of provincial per capita incomes, weighted by their shares in regional population. This is equivalent to the sum of the products of provincial population and per capita income (rural gross income), divided by regional population to produce regional rural per capita income.

population data. Thus the testing of these equations should at the very least provide some provisional evidence as to how a formula approach to grants allocation might work in practice.

#### Method and Test Results

In FY 1980-1981 the Northern, Eastern, Central, Kordofan and Darfur regions received together a total of LS 132,101,730 in central government grants.<sup>3/</sup> The separate development grant

3/ John F. Due, Report on Financial Aspects of Decentralization in the Democratic Republic of the Sudan (Khartoum: USAID, 1981), p. 33.

is not included. The method of testing is to use LS 132,101,730 million as the aggregate grant to be allocated, and to apply the population and income data in Table 2 to the two formulas in question. The results are presented in Table 3, where the actual grants received by the regions also are included for comparison.

In terms of the level of grants allocated, both Hill-Burton and  $P_i (Y_t/Y_i)$  would award substantially more to the populous Central and Darfur regions than actually was the case, and substantially less to Kordofan and the Northern region. The Eastern actual allocation is not very different from either of the formula results.

In Table 3, the regions in column one are listed in descending order of population size, and it should be noted that the rank orderings produced by both formulas replicate this ordering. This is not the case in the actual distribution in which considerations other than population and welfare were clearly involved. In both of the formulas the weights rise as per capita income falls, but in the present exercise income variations across the five regions are not large enough to alter the rank order based on population size.

The actual negotiated process, while making the largest award to the populous Central region, awards the second largest amount to the least populous area, Northern region. Darfur, with the second largest population received next to the smallest grant.

In terms of the absolute size of grants awarded, the greatest gainer from the use of either of the formulas would have been Central region, and the biggest loser would have been the Northern region. Darfur would gain substantially from the use of a population based formula, while Kordofan would lose.

A comparison of the outcomes provided by Hill-Burton and  $P_i (Y_t/Y_i)$  provides some insight into the effects of differences in their weighting procedures. Referring to Tables 2 and 3, a move from Kordofan to Darfur, for example, represents only a 4.8 percent increase in population, but this is associated with a

TABLE 3 COMPARISON OF ABSOLUTE RESULTS

<u>REGION</u>	<u>GRANT DISTRIBUTIONS (LS)</u>		
	<u>ACTUAL</u>	<u>HILL-BURTON</u>	<u><math>P_i Y_t/Y_i</math></u>
Central	41,907,600	52,484,650	53,249,552
Darfur	21,801,580	27,296,812	27,164,685
Kordofan	24,073,250	19,596,714	22,863,182
Eastern	16,390,000	16,957,121	15,023,469
Northern	27,929,300	15,766,433	13,800,842
TOTAL	132,101,730	132,101,730	132,101,730

	<u>RANK ORDERINGS</u>		
	<u>ACTUAL</u>	<u>HILL-BURTON</u>	<u><math>P_i Y_t/Y_i</math></u>
Central	1	1	1
Darfur	4	2	2
Kordofan	3	3	3
Eastern	5	4	4
Northern	2	5	5

	<u>FORMULA GAINS OR LOSSES (LS)</u>	
	<u>HILL-BURTON</u>	<u><math>P_i Y_t/Y_i</math></u>
Central	+ 10,577,050	+ 11,341,952
Darfur	+ 5,495,232	+ 5,363,105
Kordofan	- 4,476,536	- 1,210,068
Eastern	+ 567,121	- 1,366,531
Northern	- 12,162,867	- 14,128,458

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39.3 percent rise in grant allocation under Hill-Burton and an 18.8 percent rise under  $P_i(Y_t/Y_i)$ . The amplified increase in grants occurs because of the associated fall in per capita income of 11.8 percent. In both formulas, the weight attached to per capita income increases as income falls. But under Hill-Burton, the increase in weight is considerably greater than under  $P_i(Y_t/Y_i)$  for any given decline in per capita income, hence the greater grant increase under the former.

This can be seen more clearly by direct examination of the actual weights. Arranged in order of descending per capita income, these are:

Region	Per Capita Income	Weights	
		$(1.0 - 0.5 Y_i/Y_t)^2$	$Y_t/Y_i$
Kordofan	237	0.1898	0.8861
Central	213	0.2429	0.9859
Darfur	209	0.2524	1.0048
Eastern	177	0.3347	1.1864
Northern	172	0.3487	1.2209

The Hill-Burton weights are much more sensitive to changes in per capita income. Moving over the range of values available (from the level of Kordofan to the level of Northern) involves a 27.4 percent decline in per capita income. Under Hill-Burton, this is associated with an 83.7 percent increase in the weight, as opposed to only a 37.8 percent increase in the reciprocal weight equation. These relationships imply an elasticity of weight with respect to income of 3.05 for Hill-Burton, as compared to only 1.38 for the income reciprocal formula. Should there be a welfare concern for using grants to compensate low per capita income regions, the Hill-Burton formula would give better results. On the other hand, should there be less concern with differential welfare conditions and a desire to put greater emphasis on population size, the reciprocal income formula would be more desirable.

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Table 4 provides the outcomes of the alternative allocation systems on a per capita basis. Under this procedure, the impact of variations in per capita income can be more clearly seen because an allocation based on population alone would provide all regions the same per capita grant.

As in the preceding discussion, Northern and Kordofan benefit from the present negotiated allocation process. They would lose the most per capita by changing to a formula approach. Individuals in the other three regions would be somewhat better off.

The per capita grants awarded by the actual process are in perfect reverse order to population size: the smaller the population the larger the per capita grant awarded. The logic for such an outcome is elusive. The rank order of per capita awards produced by both formulas perfectly reflect their per capita incomes in reverse order. Kordofan, with the largest per capita income, receives the smallest per capita award; Northern with the smallest per capita income gets the largest per capita grant. In the actual allocation of 1980-81, Northern received a per capita grant that is 77 percent larger than what would have been the case under a Hill-Burton regime. Kordofan with the highest per capita income received the third largest per capita grant, over 22.8 percent larger than the one Hill-Burton would have produced.

#### Summary and Conclusions

Grant allocation systems based on objective measures of need, such as income and population, produce very different results from those produced by the present bargaining process, in which subjective factors and bargaining stratagems have free rein. The workings of the two formulas tested produce results that are not remarkably different. Given its simplicity,  $P_i(Y_t/Y_i)$  might be the more attractive one for use in the Sudan.

There is much to recommend a formula approach. A formula could be used to allocate grants according to objective measures of need and to reward desirable behavior such as tax or development

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TABLE 4 COMPARISON OF PER CAPITA RESULTS

REGION	PER CAPITA GRANT DISTRIBUTIONS (LS)		
	ACTUAL	HILL-BURTON	$P_i Y_t / Y_i$
Central	10,475	13,119	13,310
Darfur	10,887	13,631	13,565
Kordofan	12,595	10,253	11,962
Eastern	17,474	18,079	16,017
Northern	33,357	18,830	16,483

	RANK ORDERINGS		
	ACTUAL	HILL-BURTON	$P_i Y_t / Y_i$
Central	5	4	4
Darfur	4	3	3
Kordofan	3	5	5
Eastern	2	2	2
Northern	1	1	1

	FORMULA GAINS OR LOSSES PER CAPITA (LS)	
	HILL-BURTON	$P_i Y_t / Y_i$
Central	+ 2,644	+ 2,835
Darfur	+ 2,744	+ 2,678
Kordofan	- 2,342	- 0,633
Eastern	+ 0,605	- 1,457
Northern	-14,527	-16,874

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effort. Incentives to install orderly budgeting and planning processes are sorely needed in all regions. The reward of progress in these directions is highly desirable.

In the present system, regional bargainers apparently imagine that they are able to get larger central transfers than would be the case under alternative allocation regimes. This, however, is not the case. All negotiators cannot be winners. The present bargaining process resembles a zero sum game: for every winner there is a loser. If some get more than the grant determined by objective measure of need, others get less. Equity weighs in favor of a formula approach based on need.

There are important fiscal reasons as well for adopting a formula approach. The present system encourages the use of unrealistic regional forecasts of own revenues and expenditure requirements in order to support negotiating tactics designed to maximize grant income from the center. Deliberately misleading budgets encourage waste and inefficiency in regional government and contribute to the rising cost of public administration in the Sudan. A formula approach would encourage efficiency at all administrative levels and an end to the fiscal hemorrhage now associated with the movement toward decentralized government.

David G. Edens  
Chief of Party

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SUDAN REGIONAL FINANCE AND PLANNING PROJECT  
FOURTH QUARTERLY REPORT, 1983

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## GENERAL SURVEY

Reflecting the central project director's willingness to shift a substantial measure of responsibility and finance to regional project directors, SRFPP fund disbursements in the July-December period rose by LS 458,000, from LS 212,616 to LS 670,616. This represents an increase of 215.4 percent in six months. Fund disbursements in the past six months are more than twice as large as the total for the preceding 20 months.

Although LS 200,000 of the LS 458,000 went to Kordofan's Kheiran project alone, there was a substantial increase in funding for other project activities as well. Thus it is particularly unfortunate that the availability of the LS 100,000 transferred to the Equatoria project account was deferred temporarily because of a rupture in the Unity Bank's inter-branch transfer mechanism. As these funds did not become available until after the first of the new year, real project activities in the South did not match the release of project funds by the center.

Now that the constraint imposed on project implementation by the overly tight funding policies of the past has been eased, real resource and environmental problems are coming to the fore. At the regional level of government manpower and skill shortages inhibit implementation. Where departments are seriously unskilled and understaffed, as in Bahr El Ghazal and Upper Nile, cadre cannot be spared for longer term training, yet administrative deficiencies make organizing and presenting on-site short courses difficult. At the same time, existing skills in all target regions are not being effectively utilized.

In general political priorities take precedence over economic justification, and agencies, departments and ministries have difficulty in agreeing on common strategies and goals. In Kordofan these factors lie behind the evident difficulty there in designing and contracting the proposed resources inventory.

In all regions the lack of a supportive environment impedes project design and implementation. The lack of infrastructure, related enterprise and effective institutions are important factors in this regard. Because of these constraints design of the Juba Food Production project is challenging and the implementation of the Kheiran project has fully absorbed the capacities of Kordofan agencies involved. In view of these common problems of under-development, the work plans of Kordofan and Equatoria are ambitious.<sup>1/</sup>

#### AN ASSESSMENT OF PAST PROGRESS AND FUTURE POSSIBILITIES

Given the real resource constraints described above, future activities need to be more focused on plausible indicators of project goal attainment. The gap between available resources and the needs of decentralization is too great to justify involvement in peripheral activity.

One factor that has inhibited concentration on goal achievement in the past has been the lack of explicit project targets or benchmarks. The project paper and project agreement contain a few explicit targets but many areas of project activity are left without quantified benchmarks. In recognition of this problem, recent discussion between the USAID project manager and the chief of party has led to agreement on an extended list of project implementation benchmarks. Assuming that this list is officially accepted by the GOS and USAID early in the next quarter, it is presented here as a means for evaluating progress thus far and as a guide for future policy recommendations. Table 1 lists these proposed quantitative benchmarks (planning component only) for L.O.P. and attainments as of the end of 1983.

Considering US\$ funded items first, long-term TA potential has been underutilized thus far because for only 6 of the 26 months

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<sup>1/</sup> For the October 1983-June 1984 work plan of Kordofan see Appendix I of the Third Quarterly Report, 1983. For the January-June 1984 Equatoria work plan see Appendix I of the present report.

TABLE 1 QUANTITATIVE BENCHMARKS (PLANNING)

<u>U.S. DOLLAR FUNDED</u>	<u>Q<sub>4</sub> 1983</u>	<u>L.O.P.</u>
1. Technical Assistance		
Long Term (person months)	74	120
Short Term (person months)	1	20
2. Training		
M.Sc. (persons)	1	6
Short Courses (persons)	0	6
3. Planning Research		
Project Development Handbook (LS/\$)	0	1
 <u>L.S. FUNDED</u>		
1. Training		
Seminars and Workshops	5	12
Full Time Training (persons)	10	26
Total GOS Personnel Trained	114	200
2. Research		
Resources Inventory	0	2
Training Needs Assessment	0	1
Project Development Handbook	0	1
Research/Studies	1	9
Translations	1	13
3. Upgrading Training Institutions	0	2
4. Model Projects (Funding and Implementation)	1	6

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of project activity has the four person advisory team been up to strength. Had the team been up to strength since the start of implementation in November 1981, long-term TA would have reached 104 person-months by December 1983. Even allowing for a gradual phasing in of the advisory staff this potential is underutilized. And, as the TA contract expires in October 1984, it is likely to remain so. Assuming that contractor activities end in October 1984, and the present staff of 3 is not increased to 4, the level of effort of the long-term advisors will only reach 101. The short-term TA position is even worse. As only one person-month out of 20 has been utilized thus far, it is clear that this category of assistance will remain essentially unused.

Experience suggests that M.Sc. and short course training may likewise be underutilized. Thus far only one M.Sc. candidate has been enrolled at the University of Pittsburgh. Concerning short courses in the U.S., the early indications are that language inadequacy may inhibit the full use of this potential.

Unlike TA and training benchmarks, which are given explicitly in the project agreement, the project development handbook is a newly proposed output intended for use at the area and village council levels of government. What is proposed is a simple, step-by-step, review of the process by which projects can be designed, appraised, financed and implemented at the lower levels of administration. Perhaps it is fair to say that this endeavor, if well done, has the best chance of all project activities of making a lasting contribution to the planning process at the lower levels of government.

Turning now to the LS funded benchmarks, the GOS training benchmark of 200 persons is taken directly from the project paper. At the present time, 114 Sudanese from all target regions have participated in project sponsored training courses, workshops or seminars. Assuming that a well conceived training strategy is implemented henceforth, this goal should be within reach. This will be explored in the next section.

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Progress in the area of research is not satisfactory. Resources inventories need to be designed and implemented with the help of external expertise as necessary. A training needs assessment is underway in Equatoria, as are initial steps toward a project handbook. Thus there is at least a fair probability of success in these areas in the months ahead, assuming that these efforts are supported and augmented as necessary by Sudanese or external short-term TA. The project chief of party will undertake the writing of the study papers, of which one has been completed.

Plans to upgrade several Sudanese training institutions are now underway. It has already been agreed to assist the Regional Accountancy Training Center in Juba through tuition and support for participants in specific courses and through a general purpose strengthening grant. Grants to the Academy for Administrative Sciences and the Institute of Accountancy Studies in Khartoum are now under consideration.

The most serious deficiency is in the area of model projects. Only one, Kheiran, has been accomplished thus far and the norm is 6. Clearly this situation requires a change in tactics.

#### PROBLEMS AND SOLUTIONS

In this section, the problems and impediments presently constraining progress in each of the main areas of project activity will be reviewed and solutions suggested for each.

##### Training

In the field of training, insufficient command of English effectively screens out candidates for U.S. training who otherwise would be eligible, while the design and implementation of seminars and workshops at regional and area council levels of government is inhibited by manpower and skill shortages.

The use of U.S. short course opportunities can be accelerated by special remedial courses in English that can be arranged at the American Center. These include practice in taking the ALIGU test. Furthermore, greater use can be made of LS funds for suitable

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short courses in neighboring countries for Arabic speakers. At present the project director is exploring the possibility of sending some planners to courses offered by the Institute of National Planning, Cairo.

To deal with the problems of in-country training, greater use must be made of local teaching institutions. This is being done in the case of the DSRC in Khartoum and the RATC in Juba. Ten persons have completed or are in the regional planning diploma course offered by the DSRC, while the RATC figures largely in the training plans of Equatoria. The strategy there is to use the RATC to develop skills in Upper Nile and Bahc El Ghazal which have special needs resulting from redivision. This approach can be applied to Kordofan and the center by arranging special courses with the DSRC, the Academy for Administrative Sciences and others. The availability of strengthening grants can make this attractive to the cooperating institutions.

#### Research

The problems in the research area are simply manifestations of underdevelopment. Organizing and carrying out resources inventories implies a level of sophistication that is not to be found in newly created regional governments. Representatives of interested ministries and departments have difficulty agreeing on what to do, how to do it and why it should be done. Similarly, the conceptualization, design, writing and implementation of a project handbook that could be used by lower levels of government in any and all regions is probably beyond the limits of local authorities and the regional advisory staff. Yet at the same time, we have an embarrassment of riches in the form of unutilized short term technical assistance that could be combined with Sudanese professionals to form teams that could accomplish both tasks. In effect, project resources are available to accomplish these tasks; the problem is one of matching means and ends, not a lack of means.

#### Model Projects

The time and effort that have gone into the Kheiran project suggest that the model projects benchmark will not be met unless new tactics are adopted. Kheiran, a relatively modest agricultural

endeavor, has absorbed fully the capacities of regional officials. Yet it has to be recognized that the skill and capacity levels of government vary directly with their level. The administrative capacities of government at the village and area council levels are in most cases less than those found at the regional level.

The solution proposed is to attempt to substitute popular interest and beneficiary commitment for official capacity to develop cost effective projects. Emphasis should be on small, income generating projects that are identified by the beneficiaries. Beneficiaries should be expected to contribute labor, resources or cash to meeting the project's cost. Based on the assumption that proprietary interest tends to assure commitment to success, the element of self help can be substituted to some extent for rigorous appraisals of costs and benefits. Rough estimates of cost effectiveness may suffice. This approach should be taken experimentally by establishing a projects fund for each of several target council areas. Project proposals would be invited from village councils, local notables or traditional leaders. A project screening process would then be employed to determine which projects would be supported by the SRFPF fund on a matching basis. This approach should be tried in conjunction with the preparation of the project development handbook. Alternative variations of the process could be tried and tested in actual cases in order to determine the most suitable one to adopt for the final handbook.

Evidently the capital absorptive capacity of regional government, employing the conventional methodology of the project cycle, is not sufficiently large to utilize the LS 2.5 million available under the SRFPF. Unless some experimentation of this kind is undertaken at the grass roots, this resource will not be fully utilized in the project life remaining.

David G. Edens  
Chief of Party

KORDOFAN REGION

FOURTH QUARTERLY REPORT  
KORDOFAN REGION  
OCTOBER - DECEMBER 1983

In the last quarter of 1983 work began on several activities proposed in the region's work program. Among them were the design and organization of two in-country training courses, identification of overseas training opportunities and nomination of candidates, assignment and renovation of office space, and furnishing supplies and equipment needed by the Department of Planning. Significant progress was made with ongoing activities including implementation of the Kheiran Agricultural Project and on-the-job training provided in project planning.

NEW ACTIVITIES

1. The Kordofan Planning Advisor prepared a content outline for a short course in Needs Identification and Project Management to be conducted for District Council officials. Following general agreement between the Regional Director of Planning and the Sudan Academy for Administrative Sciences, the Planning Advisor met with trainers in the Economics and Planning Division of the Academy to exchange ideas and finalize a detailed course proposal. Objectives, topics, presentation approach, teaching materials, and instructors were agreed upon and a visit by an Academy representative to el Obeid in early January was planned to finalize arrangements. Because of a heavy course schedule at the Academy the course was scheduled to begin the last week in February.

2. With a general description of an introductory course for Department Directors and Director Generals in Regional Planning and Development provided in the work plan, the Chief of Party in Khartoum was able to work with instructors at the Development Studies Research Centre (DSRC), University of Khartoum in the development of a course outline to meet regional training objectives. The need for this course became increasingly apparent as a necessary precondition for establishment of project units in each of the regional ministries. Directors needed to be familiarized with the process of planning and informed about the significance of projects as part of the region's development strategy.

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A draft of the course proposal was forwarded to the Kordofan Advisor for review and comment. In response a document was drafted suggesting several changes and adding some topics which were felt necessary for achieving course objectives. The Director of Planning met with people at the DSRC to discuss the course proposal and work out financial and logistical details. Unfortunately the two parties could not agree either on course content nor satisfactory arrangements for instructors and financial matter and negotiations were discontinued.

The Director of Planning contacted the Sudan Academy who expressed interest in conducting this course as well as the previous course in Needs Identification and Project Management. The Kordofan Planning Advisor, while in Khartoum in late December, was prepared to begin detailed discussions concerning this course with people at the Academy. After working several days on the contents of the Needs Identification Course people at the Academy felt that they had sufficient staff to only work on one course at a time and preferred to defer discussion on the Regional Planning Course until after the first course was completed. This was the first of several troubling indications that the Academy might be overextended in its commitments and not be an institution that could be relied upon to design and deliver the various courses desired for Kordofan.

3. The Kordofan Regional Government nominated a) six candidates from the Ministries of Finance, Agriculture, and Public Services to attend an 8-week short course in project evaluation at the University of Pittsburgh and b) six candidates from the Ministries of Finance, Housing and Public Utilities, to attend a 6-week course in budgeting and financial management at the same US institution. Because of a misunderstanding concerning the procedures for selection of overseas courses, submission of candidates, and other USAID/GOS requirements, the nominations could not be processed as submitted.

These were to be the first overseas training programs sponsored by the RFPP and as such had a great deal of significance attached to them. The project evaluation course was intended to provide intensive training to young men and women whose participation was conditional on their assignment by their respective ministries to the yet to be

established project units. The course would help to overcome two significant obstacles in the way of getting this critical element of the region's planning process into place. The problems of inertia and lack of trained manpower to staff the units could both be reduced by overseas training. Whether the correct procedures and requirements for overseas training can be formulated, communicated to the region, and complied with in time to get Kordofan's two candidates to attend the financial management course scheduled to begin in early March, is uncertain.

The problems experienced with overseas training demonstrate the need to outline and communicate the procedures and regulations that must be followed to the regional government. Such instructions should be in writing and should be accompanied by a statement of the objectives that overseas training is intended to serve. Deadlines, and required lead time for processing and receiving language test scores, letters of recommendation, and travel documents should be specified and kept to so that confusion and disappointment do not become by-products of this activity.

The Minister of Finance allocated a suite of offices which were formerly those of the Provincial Commissioner to the Department of Planning. Using project funds, the offices were renovated to improve lighting, ventilation, and their general appearance. Signs were painted and furnishings installed so as to create a conducive working environment. With a workable physical arrangement the various divisions into which the department had been organized began to establish office procedures, filing systems, and began assuming the responsibilities for which they were established.

The first shipment of supplies and equipment purchased by the DLRD for the Department of Planning arrived at the end of December. Included were calculators, office supplies, and a photocopy machine. A technician from the Ministry of Finance was selected for training in machine operation, maintenance, and repair and arrangements were made for him to leave for Khartoum where he would receive training at the workshop of the supplier. The Kordofan Planning Advisor planned to hold several brief training sessions on the use of the

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desk model calculators. Policies and regulations governing the use of calculators and photocopy machine to prevent abuse were being drafted.

#### CONTINUING ACTIVITIES

Progress on two continuing activities was made which contributed in an important way toward achieving project objectives. The one "model project" which has gotten off the ground reached a "take off" stage whereby a number of obstacles to project implementation were overcome. The Kheiran Project received the second and largest installment of funds from the DLRD, bringing its financing up to the LS 250,000 level originally requested. However, with all funds at the disposal of the regional government several problems needed to be resolved to get the production units in operation for a summer 1984 crop to be planted.

The job of well excavation, construction, and installation of pumps and engines appeared to be too extensive and complicated for the Horticulture Department and the small project staff to handle by themselves. Conferring amongst themselves, the Ministers of Finance, Housing and Public Utilities, and Agriculture decided to contract the Rural Water Corporation to take on the entire construction task. Having made the decision it fell upon the director of Planning, Director of Horticulture, and Managing Director of the Rural Water Corporation to agree upon terms, cost, delivery schedule, specifications and other details.

Bargaining was complicated by the fact that the farmers who had already signed an agreement with the government needed to be consulted, as the original terms involved only supervision of construction by government. Labor was to be provided by the farmers. The new proposal aims at speeding up this phase of the project and ensuring quality workmanship. However, it would add significantly to the well construction costs - an expense that the farmers would have to pay back over a ten-year period.

A financial reappraisal was conducted based upon revised cost estimates and it was found that the return would still be attractive enough to satisfy the farmers. After negotiations an

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agreement was reached and ten construction teams were moved into the field to begin excavation, concrete block production and masonry work. With one team completing a well in 20 days it was estimated that all wells would be finished and pumping by the end of February.

Relieved of a tremendous logistical, supervisory, and organizational burden, staff from the Ministry of Agriculture were able to concentrate on procurement of other agricultural inputs including fertilizer, seed, pesticides, fuel, implements, irrigation pipe, and tree seedling production. The resident horticulturalist's house was completed and furnished, a vehicle purchased, and as the quarter came to a close he was preparing to take up residence in el Bashiry town. A plan for technical assistance to the production units was in preparation as was planning for the timing, transport, and distribution of inputs to the production units.

The Project Director has begun to draw on the technical resources of the Western Sudan Agricultural Research Project. Discussions are underway with WSARP researchers to enable them to work with some of the production units for on-farm trials of new varieties and production techniques. Included may be some experimentation with drip irrigation as a water (and fuel) conserving measure.

With the Kheiran Project out of the nursing stage the Kordofan Planning Advisor and department staff were able to begin examining and trying to develop other project proposals.

1. A flood of small projects with self-help components have been submitted from all over the region. Most involve construction or renovation of schools or clinics, but others are of a more directly productive nature such as animal traction schemes and financing start-up costs of village based handicrafts production centers. As the American Ambassador's Self-Help Fund is overwhelmed with requests, some of these proposals are being further detailed and packaged for financing from other sources including the Dutch Embassy Self-Help Fund, and the EEC Micro-Projects Fund. Additional sources of local currency financing are being investigated including the possibility of using U.S. generated local currency for establish-

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ment of a small projects fund administered by one of the established PVOs in the country such as CARE.

2. The possibility of more fully elaborating on one or two of the above project ideas and proposing them for financing under the model projects fund of the RFPP is being investigated. Especially promising is the animal traction program which adopts technological development and experience from an EEC Animal Traction Project in South Kordofan but makes it available to small holders who heretofore have been excluded due to high repayment costs for implements and animals. Also the establishment of a handicrafts cottage industry in a village nearby el Obeid is being examined. If given priority by the regional government, both proposals will be the subject of in-depth investigation in the months to come.

3. The Rashad District Infrastructure Project was brought to life once again with a request by the Minister of Finance to describe the manpower needs for a feasibility and design study. Since inter-ministerial cooperation is required, contacts are being made between the Ministers of Finance, Housing and Public Utilities, and Agriculture to assemble a team. Terms of reference for the work have been drafted and the appropriate participants, some who may have to be recruited from Khartoum, are being contacted.

All of the above project work has involved two Sudanese in the Planning Division of the Department. Officials in the other ministries and in some cases from outlying districts have also participated in project review sessions where the factual bases for the proposals were being established and technical issues or local conditions needed to be considered.

The need for a formal procedure whereby project ideas or requests are submitted, evaluated, and action of one sort or another is taken has become very apparent. Virtually all development projects now come through the offices of the Department of Planning at one time or another. There is a need to establish guidelines for the form and substance contained in such proposals, definition of the role of project units and departments in the other regional

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ministries, as well as the local units of government in the various stages of the "project cycle."

For the present, all proposals that are screened and developed into projects are sent out for financing from external sources. The Department of Planning still must be linked into the formulation of the Development Budget. Work on establishing the necessary institutional and personal linkages for the department's work to be of consequence in allocation of development funds has already begun. By establishing and institutionalizing a project review process and training the people involved at its various stages, the department and other units of government will be in a position to effectively participate in the region's planning process when and if the present development budget process is modified to include technical analysis.

#### OTHER ACCOMPLISHMENTS AND DIFFICULTIES

1. Resource Inventory: Very little progress was made in moving the proposal for a natural resources inventory toward eventual implementation. Different objectives, views as to how the work should be done, and the frequent traveling schedules of key participants in drafting the documents made it difficult to sit down and work out these fundamental differences of opinion. A reduced version of the original proposal was drafted by the Kordofan Planning Advisor, which took in only the first, and rather non-controversial phase of the inventory, that is, a review of existing literature and research findings relevant to Kordofan. This proposal lacked the appeal of a larger and more ambitious undertaking and so failed to generate much interest among regional officials. The support of a newly appointed regional Minister of Agriculture will be necessary to get a workable proposal put together and so the issue will be put before him. People at the USAID Mission in Khartoum have been contacted concerning the types of technical expertise available in country to assist in design of the proposal, its evaluation, and execution of the resource inventory itself. Most people agree that this is something that will require outside assistance as the region does not have the training nor the experience needed to carry out such an activity by itself.

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2. Meetings were held in Khartoum between the Kordofan Planning Advisor and USAID project managers responsible for other AID financed projects. The possibility of coordinating activities of those projects with the efforts presently underway to build up capacity in planning and administration at the regional level were discussed. In particular the Agricultural Planning and Statistics Project seems a likely candidate for providing assistance to the regional Ministry of Agriculture as they establish their project unit. In light of the training and technical assistance capability of this project, it was decided for the time being to delay design and execution of the course focusing on project planning as identified in the October 1983-June 1984 Work Program for Kordofan Region. The Agricultural Planning and Statistics Project has developed and begun to offer a series of short courses on the same subject. If Kordofan candidates can attend that series either in Khartoum, or preferably in el Obeid, then there would be no need to duplicate their efforts. The new Minister of Agriculture is expected to contact the Sudanese Director of that project to request training in project planning.

3. Three people from Kordofan who attended the DSRC Diploma Course in Regional Planning have graduated and returned to service in the region. All have been interviewed about their experience and efforts are underway to place them in positions that should be staffed by planners. One graduate will be joining the Department of Planning, and the other two have been proposed to staff the project unit in the Ministry of Agriculture. It is essential that individuals trained by the RFPP be placed in jobs where their skills can be of use in the region's evolving process of development planning.

4. After trying to persuade the regional government for some time that there needs to be an efficient and regular mail system between the regional and central government in Khartoum, such a system has finally been established. It is not clear what influence such advice had but in any case a system is now operational using scheduled light aircraft and a regional follow-up office in Khartoum. Improved communications can only help in carrying out planning and administrative functions in el Obeid.

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EQUATORIA REGION

EQUATORIA REGION  
QUARTERLY REPORT

OCTOBER - DECEMBER, 1983

The effects of creating the new regional governments, which came into being on July 1, were still being felt in October. The new Planning Director for Equatoria, Jino Gama, did not return to Juba until late September. He was a member of the committee responsible for distributing the physical assets of the former government among the three new regions. Although as Director of Statistics he had been a member of the Directorate of Planning, he was not familiar with the project scope, his only contact having been in specifying supplies and equipment for his department. However, by mid-October a Work Plan for Equatoria Region was prepared and submitted to the Project Director. The other regional governments had not yet moved all their officials out of Juba and in this stage of transition were not prepared to discuss project activities in their regions. Therefore no attempt was made to draft work plans for them. Furthermore, the RFPP had not dealt with the issue of how Upper Nile and Bahr El Ghazal regions might be assisted by the project.

A proposal was made to place an advisor in Wau, under the direction of and supported by the Juba advisor. This proposal was of course consistent with the original structure of the RFPP, which had provided for an advisor to serve Lakes and Bahr El Ghazal provinces. With the departure of the original Juba advisor in May, 1983, project activities in Bahr El Ghazal were limited to a planning workshop held in June in Wau. A qualified economist teaching at Juba University expressed interest in working in Wau and was acceptable to the Ministry of Finance in that region. The Director General was asked to submit a formal request for this person specifying his terms of reference. This was done, and the Project Director, Project Officer and Chief of Party concurred in approving him. Unfortunately, a decision was then made by USAID not to appoint a Bahr El Ghazal advisor and there has been no further progress on this issue.

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Although no informal training programs were planned in the South during the last quarter of the year, it was agreed in principle that project resources would continue to be available for the training of staff from Bahr El Ghazal and Upper Nile Region. The Project Director invited five officials from each of the three southern regions to participate in in-service courses in the central Ministry of Finance, Khartoum. All regions would also receive supplies and equipment for the Directorates of Planning. However, to date it has not been possible for the Juba advisor to contribute to the establishment of the new planning offices in Wau and Malakal.

In early November LS100,000 was released in Khartoum for the project account in Juba. Although this account had been opened almost one year earlier no funds had ever been released and this event was viewed as a great step forward in granting some degree of local control over project activities. This euphoria was short-lived, however, as shortly after a few expenditures (3 motorbikes, and support for the 3 MFEA participants in the in-service course in Khartoum), the Juba branch of the Bank of Sudan stopped any further payments pending approval from its Khartoum office. Unfortunately this impasse was not resolved until January 1984, effectively stopping most project activities for the remainder of the quarter. The inability of the parties concerned in Khartoum and Juba to solve this problem in a timely manner illustrates the difficulties which can be encountered in seemingly routine transactions. The Ministry of Finance in Juba was forced to use its own funds to cover the project expenditures which had been made. The momentum which had been generated in developing the work plan was all but lost.

#### TRAINING

A staff evaluation of the Department of Planning was initiated in December. Not including the Director, the Department has 13 planners, three of whom are on formal training courses. Another planner is on secondment to an external assistance agency, leaving nine planners in the Department. Five of these are recent college

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graduates with little work experience. Of the remaining four planners, one is being sent to the Department's Provincial Office in Yambio. Two of the remaining three planners have about three years experience and do most of the day-to-day work of the Department. The remaining planner is new to the Department but worked in the Department of Finance for four years. The organization of the Department is almost the same as before creation of the new regions. A staff training program is being developed and will include the Division of Statistics.

The two M.Sc. nominees from the Department of Planning traveled to Khartoum in November to take the TOEFL examination, a prerequisite for admission to American universities. Subsequently, one of the nominees was accepted in the Graduate School of Public and International Affairs at the University of Pittsburgh and left Juba in late December to enroll for the winter semester. The other nominee is hopeful of being accepted for the fall term of 1984, and is still in the process of filling out admission applications. A third staff member is continuing in the diploma course at the Development Studies Research Centre, University of Khartoum.

In late December three staff from the Ministry of Finance and one each from the Ministries of Agriculture and Administration were sent to the Central Ministry of Finance in Khartoum on an on-the-job training program. They were assigned to relevant departments to learn about Central Government operations and to meet the officials with whom they would have working contact in the future. The program was proposed to last one month for four of the participants and two months for the fifth.

In November the Ministry of Administration and Regional Affairs held a four-week workshop for 32 executive officers from Area Councils of all three regions. The Directorate of Planning was asked to participate in this workshop, which covered issues concerning administration, finances, local government functions

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and development. Because of the short notice the Directorate could not provide speakers from its staff, but the Juba advisor agreed to hold sessions concerning planning, goal setting, development policy, and analysis of costs and benefits. The executive officers in this particular workshop were generally in their mid- to late twenties. They must possess a secondary school certificate to qualify for their positions, and some have university degrees. Upon acceptance into the Ministry of Administration and Regional Affairs, they attend a one to two year course in Khartoum prior to their posting at the local level. Workshops are designed to deal with very practical issues which they encounter in their work. The planning session, for example, was intended to describe the basic steps in the planning process. Methodology and its rationale were stressed but in a very unsophisticated manner. The methodology was explained with real-life Sudanese examples wherever possible. Handouts and visual aids were used in an informal classroom setting. The planning paper presented is contained in Appendix II as an example of the level of delivery for these officials. This paper was also presented at the project workshop held in Wau in June.

#### RESEARCH

The Project Preparation Guide, which will explain the forms and procedures used by the Ministry in evaluating project proposals, was initiated with a major revision of the Project Identification Proforma. This document, to be distributed to all Ministry Planning Units and to the area/town councils, has been organized in a planning format rather than purely a budget format as before. It will be the main topic of the Guide, as it requires a rigorous documentation of the planning process and the proposed projects. The Guide is expected to be completed early next year.

Other research activities scheduled were the purchase of periodicals and references, a regional project evaluation tour, and a document search. None of these was initiated in 1983 and all are included in the work plan for January-June 1984.

## MODEL PROJECT

Several discussions were held with planning staff of the Ministry of Agriculture to formulate a strategy for designing a crop production scheme - the model project which was initially proposed by the Juba Central Area Council in February 1983. The MOA's strong advice was to proceed cautiously, as the region is replete with failed and struggling production schemes. They suggested that design not proceed until a number of studies were made, in particular evaluating past projects and building up a data base on agricultural activities in Juba District. The MOA had developed expertise in conducting field surveys on a district basis, and this approach was agreed upon for Juba District. Consequently, a research program was jointly designed and experienced MOA personnel were assigned to do the work on a contract basis with the RFPP. An A/Inspector from the Department of Planning was assigned to participate in all the field work as a training exercise for him and to keep the department apprised of survey problems and progress. The field work will start in early January.

An interministerial team visited a vegetable garden run by the Juba Area Council to evaluate its organization and production. This was the only evaluation to be completed in December, with the other projects scheduled for evaluation in January-February 1984.

The Ministry of Agriculture initiated production of base maps for Juba District using satellite images. The methodology had been developed in conjunction with the district agricultural surveys since existing maps are 25 years old or more. Settlement patterns, roads, hydrology, topography, and land use are discernible on the images but require a substantial amount of ground checking. These maps are expected to be finished in time to be of use in the model project proposal.

## PROCUREMENT

Supplies and equipment per the list submitted by the Department were purchased in Khartoum in November. However, by the end

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of the year no arrangement had been made to get them to Juba. The Department had preferred to purchase as much as possible locally because of the chronic transport bottleneck, but it was decided to purchase all supplies centrally to minimize the unit costs. It is hoped that the items purchased will appear in Juba as expeditiously as possible.

#### 1983 AND 1984

In retrospect, 1983 has been unsatisfactory in terms of the accomplishments of the Project in the South. Efforts in training were reasonably successful but the other Project components moved slowly and at times not at all. In fairness, however, there were mitigating circumstances certainly beyond the control of the project team in the South if not in Khartoum. The Juba advisor left the project in April, necessitating the relocation of the Rumbek advisor to Juba and consequently a cessation of most Project activities in Bahr El Ghazal. The Project Director, in the face of very unsatisfactory working relationships with the advisors and officials in Juba, retarded several activities prior to his own departure in mid-year. The creation of three new regions to replace the southern regional government became official on July 1, and was preceded and followed by much uncertainty, confusion, shifting of personnel, and general governmental inactivity. This transition period lasted for about four months, after which most of the new personnel assignments had been made. However, several of the top administrative posts have not been confirmed, so that more changes are possible.

By October, the new Director of Planning was able to get more involved in the project, and his leadership and vitality sparked the enthusiasm of his staff and the advisor. A completely new role emerged for the latter, as he was brought into the mainstream of department activities as a technical liaison between the Director and all the staff. Heretofore, advisor contacts had been for the most limited to the two counterparts. Changes are being made in the procedures for budget preparation,

which will be the major task of the Department until April or May. At the same time, six of the nine staff members are directly involved in Project activities. Of the remaining three, one will be sent to Yambio to man a planning office there and two are in the External Assistance section. The advisor will assist this section in revising its forms and in visiting the 40 or so agencies operating in Equatoria Region for the annual External Assistance Report.

In view of the present leadership in the Department, the prospects of accomplishing project goals appear very promising for 1984. If cash flow snafus such as recently encountered can be avoided, project resources will play an important role in enabling the Department to perform its tasks.

**APPENDIX I**

## EQUATORIA REGION

### WORK PLAN - JANUARY-JUNE 1984

Most of the activities in this Work Plan are continuations of activities initiated in 1983. This plan proposes training sessions which will be open to participants from Upper Nile and Bahr El Ghazal Regions. It is noteworthy that several of these sessions will be designed and conducted jointly with two UNDP programs - one in the Ministry of Finance (the Regional Accountancy Training Center) and one in the Ministry of Administration and Regional Affairs. Both of these programs are primarily concerned with training in the fields of financial management and administration. The planning emphasis of the Regional Finance and Planning Project complements these programs in providing training for the same client group. This inter-program cooperation is considered essential if the various training activities are to be of maximum benefit.

Most of the research activities proposed in the previous plan have not been undertaken. Several were initiated in December and will be continued until completed. The Model Project also moved more slowly than anticipated, in part because of the Ministry of Agriculture's caveat to proceed cautiously considering the high rate of failure of agricultural projects in the past. Procurement seems to have been satisfactory although coordination between Khartoum and Juba should be improved.

The activities proposed for this plan period are described in detail below. The budget and schedule are attached.

#### TRAINING

Two of the staff of the Directorate of Planning are being supported in formal coursework by this project. One is in a diploma course at the University of Khartoum, Development Studies and Research Center. He will continue in this course throughout the plan period. No expenditures are anticipated as his support is provided in Khartoum. The other staff member has been accepted in

a two-year Masters Degree program at the University of Pittsburgh. His support is arranged by the contractor in the United States and will also not require any expenditures from Juba. As three of the 13 planners in the Directorate are now enrolled in long-term courses and one is on secondment until August, no further formal training programs are planned in this period.

Two of the Directorate of Planning staff and one from the Directorate of Finance are engaged in on-the-job training in the Central Ministry of Finance. In addition, one man from the Ministry of Agriculture and one from the Ministry of Administration and Regional Affairs have been sent to their respective central ministries. All five officials are expected to complete their training by the end of January. No funds are budgeted for their support, which has been arranged in Khartoum.

The Ministry of Administration and Regional Affairs has scheduled a five-week course starting late January. All the Chief Executive Officers from Equatoria and three each from Bahr El Ghazal and Upper Nile will attend as will three education officials from Equatoria. The Directorate of Planning will hold sessions concerning local level planning, the use of statistics and the preparation of the development budget. Funds are needed for preparation of course materials and a portion of the support for the attendees.

A course on project management, to be sponsored jointly by the Directorate of Planning and the Regional Accountancy Training Center (RATC), is proposed to begin in March and would run for three months. Attendants would be regional officers engaged in development projects and managing enterprises, including representatives from the private sector. The Directorate would be responsible for sessions on development economics and the project cycle, with the emphasis on planning and budgeting. Funds are needed for lecturers, course materials, and a portion of the subsistence for the attendees. The course would be held at the RATC. The client group would be officials from the regional ministries and persons in the private sector who are responsible for managing development projects.

The Department of Statistics has a small computer which could be utilized to store data and perform analyses as required. The computer could also be used in budget analyses by the planning staff. Unfortunately none of the staff has been trained to use the computer, which should be an integral part of the Directorate's activities. Funds are needed for a long-term advisor to determine how the computer should be utilized by the Directorate and to train local staff in its use. It is expected that it will be necessary to send at least one of the staff abroad to learn programming and computer usage in a planning environment. Most of the required funds would therefore be in hard currency. Further specification for this plan item cannot be made until a preliminary assessment is done by a qualified computer consultant.

A study tour looking at local and regional organizations in a variety of settings would be of great benefit to the senior officials of the Directorate of Planning. It is anticipated that two officials would go for two or three months, visiting relevant organizations in developing and developed countries. Because of the contractor's wide experience in a variety of planning environments they could tailor such a tour to meet the needs of the Sudanese officials. No local currency expenditure is planned for this item at this time.

Finally, it is expected that the Directorate of Planning will collaborate with the Ministry of Administration and Regional Affairs on a second course for Area Council officials toward the end of the plan period. This course has not been designed as yet but funds are requested in anticipation for course materials and support of the attendees. Detailed planning for this course should commence during March or April.

#### RESEARCH

Work on the Project Preparation Guide, which was initiated in December, is expected to be completed in January. A lecturer from the University of Juba was retained to assist in the preparation of

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the guide. Funds are budgeted to meet the consultant's expenses and to produce a large number of copies of the guide. This item was budgeted at LS25,000 in the previous Work Plan but no funds have been spent as yet.

The previous budget item of purchasing periodicals and publications for the Directorate Library is repeated in this plan. Materials to provide a proper library/document room will also be purchased.

The staff evaluation initiated in the previous plan period will be completed in January. No expenditure of funds is expected for this item, which will include a staff training schedule.

The previous work plan described the need to do an evaluation of all the projects in the region which are receiving development funds. This essential activity was barely started in December and is now continuing. It is expected that it will require several months to complete depending on the availability of vehicles, fuel and staff. Funds are budgeted for these transport costs and per diems.

Finally, the review of existing studies and reports for inclusion in the Directorate Library as planning references was not initiated as proposed in the previous work plan. This activity is again included and funds are budgeted for a short-term consultant to do a document search, review the documents and recommend how the information collected can be used in the Directorate's programs.

#### MODEL PROJECT

The basic studies which will lead to a proposal for funding of a model project will continue for most of the plan period. In view of the plethora of unsuccessful agricultural projects the Directorate has decided to proceed very carefully in the project design stage. This approach has been strongly suggested by the Ministry of Agriculture, whose staff are conducting the ongoing studies with Directorate participation. Funds are needed to support these studies (primarily field surveys and project evaluations) and to prepare the proposal. which hopefully will be done by the end of the plan period.

The Directorate strongly feels that a fund removed from regular Ministry access would be of great benefit in assisting self-help projects. Such a fund would be administered through the existing project account and would assist in the completion of many small-scale projects which are abandoned for lack of cash to purchase essential items. Typical are schools, health care centers, community development centers, etc. Most of the amount requested would be designated to assist Area Council projects, which at present are not receiving any assistance from the regional government due to the chronic shortage of funds. This proposal would provide a reliable source of funding, foster planning links between regional and local levels of government, and result in the completion of much needed projects which have virtually no hope of receiving assistance from existing sources.

#### PROCUREMENT

It is assumed that the items requested in the previous work plan have been purchased in Khartoum. Funds may be needed to ship them to Juba. Funds are also requested to purchase two Suzukis, a 7½/10 KV generator for the statistics office (needed to run the computer and air conditioner), and a statistics office block in Torit. The Directorate plans to place staff in Yambio and Torit, the provincial capitals.



BUDGET

TRAINING

LS 55,000

CEO 5-week course	10,000
Project Management course	35,000
Area Council officials	10,000

RESEARCH

20,000

Project Preparation Guide	10,000
Periodicals and Publications	2,500
Regional Project Evaluation	5,000
Review of Existing Studies	2,500

MODEL PROJECT

187,000

Continuation of Base Surveys	35,000
Preparation of Proposal	2,500
Self-Help Fund	
Regional	50,000
Area Council	100,000

PROCUREMENT

Supplies and Equipment	25,000
Shipment Khartoum to Juba	10,000
Two Suzukis	
7-10 KV Generator	
Office Block in Torit	

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APPENDIX II

## REGIONAL AND LOCAL PLANNING

Planning is the process of allocating resources to achieve desired goals. We all plan constantly, making decision on how to use our time, money and possessions. We plan for tomorrow, next week, next month and sometimes for longer time frames. We constantly change our plans, especially in the short term. As we receive new information about our surroundings and the activities and people around us we make new decisions about what we want to do.

This simple example of planning in our everyday lives also describes what we mean by planning as a major undertaking of government. At both the regional and local levels, government is charged with the responsibility of determining how scarce resources should be used in order to produce desired changes. However, the task is much more complex, for government planners must consider many more variables and interrelationships than we do as individuals. How can this simple concept of planning be expanded to describe the methods planners use in their important task? Let's examine the steps involved in planning to see how we progress from where we are to where we want to be. These steps are fundamental to planning at all levels - national, regional, and local. The primary difference between these levels of planning is precision. As we shall see, planning necessarily becomes more specific as we move from the regional to the local level.

The first question planners ask is "Where are we? What resources do we have and how are they being used? Answering this question gives us a baseline, which is the planning term, for all the information we can assemble on the existing situation. Included are aspects of the natural environment, socio-economic environment, and how they interrelate. The natural environment includes the following types of features:

(Regional-Local)

1. Land uses
2. Soils/Geology
3. Hydrology

4. Mineral resources
5. Climatic zones
6. Wildlife
7. Forestry
8. Habitat types
9. Environmental degradation, e.g., erosion, desertification, pollution.

In order to use these resources wisely it is necessary to know their location, areal extent, and quality. This information is best presented on maps which are usually produced from aerial photographs and on-the-ground reconnaissance. Producing the maps can be a very costly operation and they must be updated regularly. Most of the base maps for the southern region were produced more than 40 years ago. Stream courses, roads and villages have changed so much that these maps are of little use today. There is a group of planners in the MOA which is producing new base maps from satellite images. Unfortunately only a few districts have been mapped so this remains a major constraint to planning, especially at the local scale.

The socio-economic environment includes man and all the features he has produced. Obviously it is essential to know how many people there are, where they are located and what they are doing. A list of basic socio-economic information would include the following:

1. Demographic Data: birth rate, death rate, family size, education, health, marital status
2. Economic Data: Income, employment, production, government revenue and expenditure, retail trade
3. Infrastructure: Schools, clinics, roads, water, electricity, sanitation, recreational facilities
4. Housing: Type, quality, size, location

Demographic data will soon be available from the recently completed census. The Social Monitoring Project will also provide information, particularly on the availability of social services and basic infrastructure. Area Councils should become familiar with both of these sources. Employment is included in the census but the other economic data would require special surveys.

Infrastructure is included in the Social Monitoring Project. Housing information is not now generally available but will in part be provided by the census.

Although all the above information is necessary to understand the existing situation at both the regional and local levels. I am not suggesting that the first 10 years must be spent in compiling data only. Planning can proceed for priority concerns while basic research is being conducted in other areas. For example, evaluating the adequacy of the educational facilities could probably be done quickly and easily and planning could proceed to meet the identified needs. Meanwhile, studies related to environmental degradation could involve years of research by specialists who would make recommendations for action at both the regional and area council levels.

There are two basic ways to collect data: through rapid reconnaissance and through sample surveys. The reconnaissance could be done in those areas mentioned previously with detailed studies done in those areas which the reconnaissance indicates are particular problems. An area which has always had plenty of water would not assign high priority to expensive hydrological investigation. This raises another important aspect concerning data collection. Most of the features in both categories (natural and man-made), are variable while some are non-variable. Examples of the former are land use, wildlife, environmental degradation and all of the demographic and economic data. All these things change over time - some very rapidly. This change becomes extremely important to the planner - he must know what the trends are and what causes them. Therefore it is necessary to collect data on these items at frequent intervals. Usually a planning agency will have a unit responsible for keeping current information, analysing it, and reporting the trends to the planners. The non-variable data either do not change at all (soils, geology, mineral resources), change very slowly (hydrology, climate, habitat types) or change in easily measureable increments (infrastructure). Those that don't change obviously only need to be examined once, provided a thorough study is made. Changes in the natural environment usually occur over

several years, while the infrastructural changes can easily be recorded when they are made.

So, now we have a good data base. We know what our resources are and we have some ideas about the more obvious problems which demand our attention. Where do we go from here? We have to determine how we want to utilise our resources to bring about the changes we feel are desirable. These changes must be economically feasible, technically possible, and socially desirable. Before we can specify such changes we must have well-defined goals in mind. The setting of goals, then, is the second step in planning. Goals are statements of how we want our society to function. It is crucial to involve the public in the setting of goals so that there will be public support for the plans we make to reach these goals. In the Sudan the Sudanese Socialist Union, the Village Development Committees and the Area Councils themselves all provide opportunities for the exchange of ideas on goals. At the regional level, the goals are less likely to involve public debate since regional goals are for the most part more general, at least spatially. At the district level, the goals will be quite specific and will be easier to respond to for the public. A regional goal might be to improve feeder roads in agricultural areas, whereas at the district level a goal would be to improve the Gogrial-Wau road.

The setting of goals is done in the light of the information we have gathered in the first step. Our infrastructure survey has told us that the Wau-Gogrial road needs so many bridges and culverts, filling in of holes, and grading. The survey might also tell us how many vehicles use the road every day. If we have enough information like this, we can assign priorities to our goals. The Wau-Rumbek road, as a regional road, would receive greater priority in planning at the regional level than would the Wau-Gogrial road. However, in Gogrial district, it could well be the highest priority in terms of transport needs.

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In education, Gogrial District could have a goal of one elementary school per 150 students and one senior secondary school per 100 students. How do we choose between these goals in terms of priority? Which is more important? One way to determine this is to compare each goal to our baseline data. Our surveys tell us that we have one elementary school per 250 students and one senior secondary school per 300 students. We could decide that since we are closer to our goal in elementary schools, the senior secondary schools should have higher priority, at least until the number of schools is closer to the stated goal. At this stage of development in the southern region, goals should be set to reflect the minimum acceptable level of performance. It does no good to propose tarred feeder roads or schools with gymnasiums. The goals we are setting define the basic needs of the people in terms of government services, economic activities and living conditions, while recognizing the need to protect the natural environment.

Goals are set concerning natural resource utilization, certain demographic characteristics (e.g. birth and death rates, family size), infrastructure and government services, economic activities, and housing. The next problem is how to compare goals from category to category. How do we determine whether it is more important to improve the water supply or build schools? The method indicated earlier could also be used here, comparing base-line data to the stated goals. However, it must be recognized that some categories are more basic than others. Clean water, food, shelter and good health must be considered of greater importance than roads or electricity. Of course, all these things are inter-related, so it is a very difficult task to evaluate them separately. The better our data and information base the better this task can be performed. The setting of goals is probably the most difficult task in the planning process. It requires public participation, political guidance, and a thorough understanding of the existing conditions. Goals must be clear, precise and realistic. Priorities must be established and conflicts between goals resolved.

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Now that we know where we are (base line) and where we want to be (goals), we can begin to develop alternative programs of action to reach these goals. The third step, then, is identifying alternative plans. In education, for example, one plan might be to build a secondary school every two years and remodel the existing primary schools to increase their capacity. Two streams of students in every school could be an alternative, reducing the need for new buildings. There might be several approaches to locating the schools, to their size, pupil-teacher ratio etc. Plan alternatives should be different enough to enable comparisons to be made. Minor variations do not constitute alternatives in this sense. A given plan can contain some sub-options, which can be fine tuned later. An alternative is a policy approach which affects the cost, rate of implementation, quality and/or quantity of the item we are planning for. All these attributes can be measured. A complete planning report will present alternatives, ranking them in terms of preference, and also describe what alternatives were rejected and why.

A plan can be developed for almost any of the units of data collection which were listed in the first step. These are called sector plans, and they focus on a specific issue, such as agricultural production, or even a subset of that issue, such as dura production. A plan could also be done on a geographical basis, such as a Comprehensive Plan for Yirol District. This plan would include all the sectors relevant to that particular area. In the United States, regional planning is usually done on the sector basis while local planning is area based, usually political subdivisions. Some sectoral plans are also area based, utilizing either political or natural boundaries. An example of the former would be a housing plan for Wau, while the latter might be a water utilization plan for the Jur watershed.

The planning report must also contain some type of cost-benefit analysis, which is step number 4 in the process. This analysis provides the measurements just mentioned. Direct costs are the easiest to identify, being the total of all the land,

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labor and materials required to implement the plan. Costs are usually only general estimates in this stage of planning, although the more accurate the better. Indirect costs are incurred as a result of plan implementation. Road improvements may require lengthy and difficult detours during construction, raising the transport costs of the road users. One school plan may require some students to travel long distances, perhaps making it impossible for them to attend regularly and thus affecting the quality of the education they are receiving. Planning for the expansion of domestic animal production may result in a reduction of wildlife. Any use of land precludes its use for other activities. This is called opportunity cost. Building a facility on good agricultural land reduces the resource base of the district. Putting a road through a forest means a measureable loss of trees and could also mean easier exploitation of the forest. This could be a cost or a benefit, depending on whether the goal is to preserve the forest or utilize it.

Cost-benefit analysis must look at all the impacts of plan implementation, describe them as precisely as possible, and quantify them, again where possible. Many impacts will be of a qualitative nature and therefore very difficult to quantify. Trees and wildlife have esthetic value but no one has been able to express this in terms of pounds. Community pride is another example - it is certainly a desirable state but impossible to quantify. How much is a recreation field worth to those people who use it regularly? The concept of cost-benefit should be applied as broadly as possible to include all impacts. Costs and benefits may also change with time and/or because of other improvements. An example of the former is a road from village to village, which gradually leads to increased agricultural production in the area between the villages because of improved access to markets. Such a benefit is impossible to count except as a potential in the road plan, but could ultimately prove to be the major impact of the road project. Conversely, the road through the forest could lead to the destruction of a resource that takes many years

to renew. In our school example of a few minutes ago, a bus could solve the transport problems of the most distant students so that school location need not be a detriment to their education. A plan for mass transit would be a benefit to almost all government services, making them more easily accessible.

We now have alternative plans with cost-benefit analyses to assist in the next step, which is plan selection. In democratic countries, plan selection is the responsibility of the political process. The planners must present their findings and hope to influence the decision makers, but have no guarantee of being able to do so. In fact, plans are not necessarily selected on the basis of cost-benefit analyses. The most efficient and most effective plan may be rejected for political reasons. This is a reality which the planner must recognize, and it is in his interest to be aware of likely conflicts. At times he may feel compelled to challenge existing policies by proposing a new approach to reaching the goals. He may even find after going through these steps that a goal is not realistic, or is unfair to a segment of the population or is unacceptable for some other reason. Thus his plan may include a change in the stated goal. In plan selection the planner must use his communications skills to convey his message effectively.

Once the plan has been selected it moves to implementation. Projects are identified to meet the goals of the plan according to the timetable which the plan should include. The project cycle is the subject of a separate session and will not be discussed here. It should be noted, however, that the results of the project evaluation must be used in plan evaluation - particularly steps 2, 3 and 4. Project evaluation may lead to goal modification, the identification of new alternatives and better cost-benefit analysis. A plan should not be considered a work of art, like a novel, to be read once and shelved. It is a living document, perhaps requiring changes, certainly requiring renewal in time. A plan for educational facilities may be needed every 5 years and for roads every 10 years. The last regional plan was for a 6-year

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period but future regional plans will probably be for shorter periods because of the difficulties in making economic forecasts.

In closing, I would like to mention a few of the more common planning pitfalls I have encountered.

The first is what I call the 'boundary syndrome'. Of course, an area council, just like a regional government, is responsible for a political jurisdiction, nothing more and nothing less. The boundaries are easy to see on the map if not on the ground. However, that does not mean the council planner should be completely oblivious of what's going on across that boundary. Money can be wasted by not coordinating the planning of facilities which affect other districts or regions. Roads are the most obvious example. Another would be the utilization of water resources. Water catchments in the district will obviously affect water supply in downstream districts. It is also possible that providing a facility in one district may invite utilization by residents in other districts. This is very common today in schools, where students go to any school which will accept them. Obviously this can play havoc with facilities planning, and policies need to be established concerning the use by non-district residents.

Second, planning in the southern region has been characterized by over-commitment and over-estimation of resources. The regional plans have never been able to be realized because of the financial problems about which we all know. The districts are going to have to do better in estimating revenue generation and the ability to absorb new projects.

Third, planning at the district level must include activities of the regional and central governments as well as external assistance. District planners must be familiar with these projects and should be involved in the planning of new ones. Often such projects are the largest employers in a district and to exclude them from the planning process makes no sense. The same

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is true of the regional planners, who must incorporate nationally and externally funded projects in their planning.

I have emphasized planning at the district level, but as I stated initially the process I have described applies to the regional and national levels as well. I believe planning at the district level is the most difficult, because there is no place to hide. The regional planner can say "we must increase dura production in the region." He could even specify a province. But it is the district planner who must make the hard decisions on precisely where and how this is to be done. Of course he should receive assistance from the regional planners. For the most part, however, the locational decisions will be made at the district level, and it is the district which will be most directly affected by the successes and failures.

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June 3, 1983

APPENDIX III

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GRANT ALLOCATION BY FORMULA:  
SOME IMPLICATIONS AND PRELIMINARY FINDINGS

The preceding Third Quarterly Report contains a paper, which proposed among other things, an illustrative formula for allocating central grants among the regions.<sup>1/</sup> The purpose of the present paper is to assess the impact a formula approach might have on the grant allocations now being received by the various regions. In doing so, it should be acknowledged at the outset that the data available for this purpose are incomplete, of dubious quality and, in some cases, at odds with similar information from other sources. The results, therefore, should be thought of as only provisional indications of probable effects. Even so, exercises of this kind are necessary if steps toward a more objective and equitable allocation process are to be seriously considered by the authorities.

Grants Formulas

The grants formula proposed in the previous paper combines three allocative elements to which distributive shares were assigned. The main element was a formula for allocating funds on the basis of population weighted by per capita income. Population and income are universally recognized as the prime factors to consider in appraising state or regional need for central government assistance. The larger the population of a region, in relation to that of other regions, the greater will be its justification for central assistance, unless offset by relatively high per capita income. The presumption is that the higher is per capita income in relation to the national average, the better able a region should be to finance its own activities from its own tax base.

The earlier formula also included elements for rewarding revenue effort and development effort of regional governments. To give the central authorities a measure of control over the outcome a share of 80 percent of the total grant was assigned the main population and income element in the illustrative example, while the other

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<sup>1/</sup> David G. Edens, "Economic Considerations in Decentralization Policy," Sudan Regional Finance and Planning Project, Third Quarterly Report, 1983 (Development Alternatives, Inc.), Appendix III.

elements were assigned 10 percent each. These proposed shares are policy variables and are not an essential part of a grants formula; the outcome could have been left to the workings of objective factors in a suitably constructed formula.

At this writing, reliable information on development spending and tax effort are not available for enough regions to contribute to a meaningful test of the allocation impact of the complete equation presented in the prior paper. On the other hand, some interesting data on population and per capita income in rural northern Sudan have recently been published and are well suited to formula testing. These data are discussed in the next section.

Given the lack of tax and development effort data, this inquiry is restricted to the main elements of population and income. Extracting from the earlier paper, the formula now is

$$A_i = G \frac{P_i (1.0 - 0.5Y_i/Y_t)^2}{\sum P_j (1.0 - 0.5Y_j/Y_t)^2}$$

where G is the total grant to be allocated,  $P_i$  is the population of the  $i^{\text{th}}$  region,  $Y_i$  is the per capita income of the  $i^{\text{th}}$  region and  $Y_t$  is the per capita income of the nation. The denominator is the sum of these expressions for all regions.

This is the Hill-Burton formula used by the U.S. federal government for allocating unconditional grants-in-aid to the states. In this formulation grants are allocated on the basis of population, weighted by relative per capita income. The formula has the effect of increasing the weights sharply as regional per capita income declines.

In the analysis that follows, the results of an alternative formula are also provided for purposes of comparison. This is a simpler formula that provides allocation on the basis of population weighted by the reciprocal of relative per capita income.

This formula is:

$$A_i = G \frac{P_i (Y_t/Y_i)}{\sum P_j (Y_t/Y_j)}$$

where G is the total grant to be allocated,  $P_i$  is the population of the  $i^{\text{th}}$  region,  $Y_i$  is the per capita income of the  $i^{\text{th}}$  region and  $Y_t$  is the per capita income of the nation. The denominator is the sum of these expressions for all regions.

### Regional Data

A recently published UNDP/IBRD study, prepared for the Ministry of Finance and Economic Planning, provides some rural family income and population estimates for eleven provinces of northern Sudan.<sup>2/</sup> These data are presented in Table 1 and are consolidated on a regional basis, in order of population size, in Table 2.

It should be noted in using these estimates that rural income and population data by region give only a partial measure of regional income and population. The urban elements could substantially alter the picture where there are large towns or cities generating incomes based on higher productivity industrial or service activities, rather than on agriculture. While conceding this, the purpose of this exercise is to begin to compare grant allocation outcomes provided by different formulas or distributive devices, given some suitable income and population data, rather than attempt to measure income and population precisely. Should adding urban income and population to rural elements raise their levels without much altering the relative positions of regions, their relative positions in grant outcomes would also be little changed. In these formulas what matters is a region's relative income and population position, not its absolute levels of income and population. As Khartoum is not included in these tests, it is plausible to suggest that relative regional positions would not be substantially changed by the use of total regional income and

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<sup>2/</sup> The Democratic Republic of the Sudan, Ministry of Finance and Economic Planning (Planning), Rural Labour Study in Northern Sudan (UNDP/IBRD, Planning Assistance and Training Project, Khartoum, 1983).

TABLE 1 RURAL POPULATION AND INCOME BY PROVINCE, 1981

<u>REGION</u>	<u>PROVINCE</u>	<u>POPULATION</u>	<u>ANNUAL PER CAPITA INCOME (LS)</u>
CENTRAL	BLUE NILE	954,924	277
	GEZIRA	1,863,688	185
	WHITE NILE	1,182,130	206
DARFUR	N. DARFUR	932,813	199
	S. DARFUR	1,069,795	218
KORDOFAN	N. KORDOFAN	1,095,822	265
	S. KORDOFAN	815,483	200
EASTERN	KASSALA	794,949	185
	RED SEA	143,020	135
NORTHERN	NORTHERN	362,884	160
	NILE	474,412	181

SOURCE: The Democratic Republic of the Sudan, Ministry of Finance and Economic Planning (Planning), Rural Labour Study in Northern Sudan (UNDP/IBRD), p. 57 and p. 94.

TABLE 2 RURAL POPULATION AND INCOME BY REGION, 1981

<u>REGION</u>	<u>POPULATION</u>	<u>ANNUAL PER CAPITA INCOME (LS)</u>
CENTRAL	4,000,742	213
DARFUR	2,002,608	209
KORDOFAN	1,911,305	237
EASTERN	937,969	177
NORTHERN	837,296	172
TOTAL	9,689,920	210

NOTE: Regional rural population is the sum of province rural populations. Per capita incomes are the sums of provincial per capita incomes, weighted by their shares in regional population. This is equivalent to the sum of the products of provincial population and per capita income (rural gross income), divided by regional population to produce regional rural per capita income.

population data. Thus the testing of these equations should at the very least provide some provisional evidence as to how a formula approach to grants allocation might work in practice.

#### Method and Test Results

In FY 1980-1981 the Northern, Eastern, Central, Kordofan and Darfur regions received together a total of LS 132,101,730 in central government grants.<sup>3/</sup> The separate development grant

3/ John F. Due, Report on Financial Aspects of Decentralization in the Democratic Republic of the Sudan (Khartoum: USAID, 1981), p. 33.

is not included. The method of testing is to use LS 132,101,730 million as the aggregate grant to be allocated, and to apply the population and income data in Table 2 to the two formulas in question. The results are presented in Table 3, where the actual grants received by the regions also are included for comparison.

In terms of the level of grants allocated, both Hill-Burton and  $P_i (Y_t/Y_i)$  would award substantially more to the populous Central and Darfur regions than actually was the case, and substantially less to Kordofan and the Northern region. The Eastern actual allocation is not very different from either of the formula results.

In Table 3, the regions in column one are listed in descending order of population size, and it should be noted that the rank orderings produced by both formulas replicate this ordering. This is not the case in the actual distribution in which considerations other than population and welfare were clearly involved. In both of the formulas the weights rise as per capita income falls, but in the present exercise income variations across the five regions are not large enough to alter the rank order based on population size.

The actual negotiated process, while making the largest award to the populous Central region, awards the second largest amount to the least populous area, Northern region. Darfur, with the second largest population received next to the smallest grant.

In terms of the absolute size of grants awarded, the greatest gainer from the use of either of the formulas would have been Central region, and the biggest loser would have been the Northern region. Darfur would gain substantially from the use of a population based formula, while Kordofan would lose.

A comparison of the outcomes provided by Hill-Burton and  $P_i (Y_t/Y_i)$  provides some insight into the effects of differences in their weighting procedures. Referring to Tables 2 and 3, a move from Kordofan to Darfur, for example, represents only a 4.8 percent increase in population, but this is associated with a

TABLE 3 COMPARISON OF ABSOLUTE RESULTS

REGION	GRANT DISTRIBUTIONS (LS)		
	ACTUAL	HILL-BURTON	$P_i Y_t/Y_i$
Central	41,907,600	52,484,650	53,249,552
Darfur	21,801,580	27,296,812	27,164,685
Kordofan	24,073,250	19,596,714	22,863,182
Eastern	16,390,000	16,957,121	15,023,469
Northern	27,929,300	15,766,433	13,800,842
TOTAL	132,101,730	132,101,730	132,101,730

	RANK ORDERINGS		
	ACTUAL	HILL-BURTON	$P_i Y_t/Y_i$
Central	1	1	1
Darfur	4	2	2
Kordofan	3	3	3
Eastern	5	4	4
Northern	2	5	5

	FORMULA GAINS OR LOSSES (LS)	
	HILL-BURTON	$P_i Y_t/Y_i$
Central	+ 10,577,050	+ 11,341,952
Darfur	+ 5,495,232	+ 5,363,105
Kordofan	- 4,476,536	- 1,210,068
Eastern	+ 567,121	- 1,366,531
Northern	- 12,162,867	- 14,128,458

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39.3 percent rise in grant allocation under Hill-Burton and an 18.8 percent rise under  $P_i(Y_t/Y_i)$ . The amplified increase in grants occurs because of the associated fall in per capita income of 11.8 percent. In both formulas, the weight attached to per capita income increases as income falls. But under Hill-Burton, the increase in weight is considerably greater than under  $P_i(Y_t/Y_i)$  for any given decline in per capita income, hence the greater grant increase under the former.

This can be seen more clearly by direct examination of the actual weights. Arranged in order of descending per capita income, these are:

Region	Per Capita Income	Weights	
		$(1.0 - 0.5 Y_i/Y_t)^2$	$Y_t/Y_i$
Kordofan	237	0.1898	0.8861
Central	213	0.2429	0.9859
Darfur	209	0.2524	1.0048
Eastern	177	0.3347	1.1864
Northern	172	0.3487	1.2209

The Hill-Burton weights are much more sensitive to changes in per capita income. Moving over the range of values available (from the level of Kordofan to the level of Northern) involves a 27.4 percent decline in per capita income. Under Hill-Burton, this is associated with an 83.7 percent increase in the weight, as opposed to only a 37.8 percent increase in the reciprocal weight equation. These relationships imply an elasticity of weight with respect to income of 3.05 for Hill-Burton, as compared to only 1.38 for the income reciprocal formula. Should there be a welfare concern for using grants to compensate low per capita income regions, the Hill-Burton formula would give better results. On the other hand, should there be less concern with differential welfare conditions and a desire to put greater emphasis on population size, the reciprocal income formula would be more desirable.

Table 4 provides the outcomes of the alternative allocation systems on a per capita basis. Under this procedure, the impact of variations in per capita income can be more clearly seen because an allocation based on population alone would provide all regions the same per capita grant.

As in the preceding discussion, Northern and Kordofan benefit from the present negotiated allocation process. They would lose the most per capita by changing to a formula approach. Individuals in the other three regions would be somewhat better off.

The per capita grants awarded by the actual process are in perfect reverse order to population size: the smaller the population the larger the per capita grant awarded. The logic for such an outcome is elusive. The rank order of per capita awards produced by both formulas perfectly reflect their per capita incomes in reverse order. Kordofan, with the largest per capita income, receives the smallest per capita award; Northern with the smallest per capita income gets the largest per capita grant. In the actual allocation of 1980-81, Northern received a per capita grant that is 77 percent larger than what would have been the case under a Hill-Burton regime. Kordofan with the highest per capita income received the third largest per capita grant, over 22.8 percent larger than the one Hill-Burton would have produced.

#### Summary and Conclusions

Grant allocation systems based on objective measures of need, such as income and population, produce very different results from those produced by the present bargaining process, in which subjective factors and bargaining stratagems have free rein. The workings of the two formulas tested produce results that are not remarkably different. Given its simplicity,  $P_i(Y_t/Y_i)$  might be the more attractive one for use in the Sudan.

There is much to recommend a formula approach. A formula could be used to allocate grants according to objective measures of need and to reward desirable behavior such as tax or development

TABLE 4 COMPARISON OF PER CAPITA RESULTS

REGION	PER CAPITA GRANT DISTRIBUTIONS (LS)		
	ACTUAL	HILL-BURTON	$P_i Y_t/Y_i$
Central	10,475	13,119	13,310
Darfur	10,887	13,631	13,565
Kordofan	12,595	10,253	11,962
Eastern	17,474	18,079	16,017
Northern	33,357	18,830	16,483

	RANK ORDERINGS		
	ACTUAL	HILL-BURTON	$P_i Y_t/Y_i$
Central	5	4	4
Darfur	4	3	3
Kordofan	3	5	5
Eastern	2	2	2
Northern	1	1	1

	FORMULA GAINS OR LOSSES PER CAPITA (LS)	
	HILL-BURTON	$P_i Y_t/Y_i$
Central	+ 2,644	+ 2,835
Darfur	+ 2,744	+ 2,678
Kordofan	- 2,342	- 0,633
Eastern	+ 0,605	- 1,457
Northern	-14,527	-16,874

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effort. Incentives to install orderly budgeting and planning processes are sorely needed in all regions. The reward of progress in these directions is highly desirable.

In the present system, regional bargainers apparently imagine that they are able to get larger central transfers than would be the case under alternative allocation regimes. This, however, is not the case. All negotiators cannot be winners. The present bargaining process resembles a zero sum game: for every winner there is a loser. If some get more than the grant determined by objective measure of need, others get less. Equity weighs in favor of a formula approach based on need.

There are important fiscal reasons as well for adopting a formula approach. The present system encourages the use of unrealistic regional forecasts of own revenues and expenditure requirements in order to support negotiating tactics designed to maximize grant income from the center. Deliberately misleading budgets encourage waste and inefficiency in regional government and contribute to the rising cost of public administration in the Sudan. A formula approach would encourage efficiency at all administrative levels and an end to the fiscal hemorrhage now associated with the movement toward decentralized government.

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