PN-ABB-954
60182

COOPERATIVE AGREEMENT ON SETTLEMENT AND RESOURCE SYSTEMS ANALYSIS

PROCEEDINGS TO THE CONFERENCE ON

THE AFRICAN EXPERIENCE WITH RIVER BASIN DEVELOPMENT:
ACHIEVEMENTS TO DATE, THE ROLE OF INSTITUTIONS,
AND STRATEGIES FOR THE FUTURE

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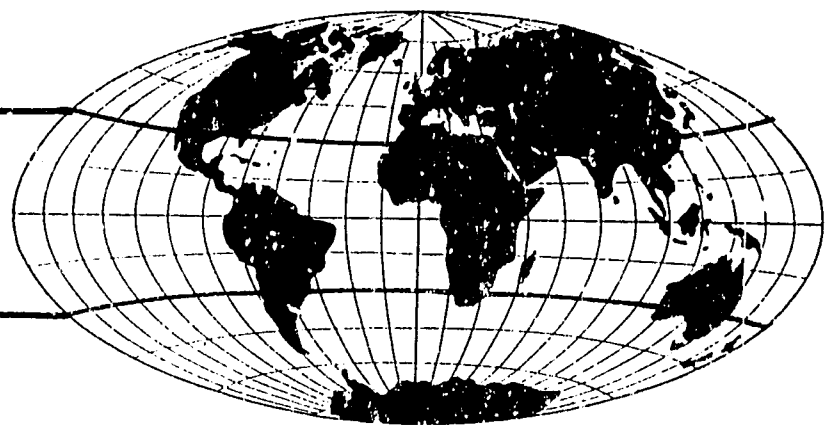

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HELD MAY 24 - 27, 1988
AT THE TIDEWATER INN, EASTON, MARYLAND

Prepared for

The Africa Bureau
U.S. Agency for International Development
Washington, D.C. 20523

1988

This paper is published by Clark University and the Institute for Development Anthropology and reports on work supported by Human Settlement and Natural Resource Systems Analysis (SARSA) Cooperative Agreement No. DAN-1135-A-00-4068-00 at Clark University and the Institute for Development Anthropology, funded by the U.S. Agency for International Development, Office of Rural and Institutional Development, Bureau for Science and Technology, Division of Rural and Regional Development. The views and interpretations in this publication are those of the authors and should not be attibuted to the Agency for International Development or to any individual acting on its behalf.

INTRODUCTION

An international conference on the African Experience with River Basin Development supported by the Bureau for Science and Technology and Africa Bureau of the United States Agency for International Development was held at Easton, Maryland from May 25 to 27, 1988. Organized under the auspices of U.S.A.I.D.'s SARSA (Human Settlement and Natural Resource Systems Analysis) research program, the event was planned to benefit not only the agency itself but a wide range of other international and African institutions.

Over fifty international specialists representing thirty-five institutions discussed issues and problems related to river basin development. Participants were asked to bring their experiences to bear on the assessment of such activities as: river basin planning and coordination; project management; linkages with local organizations; the involvement of donor financing; and methods and priorities for research. Presentations organized in plenary sessions addressed six key issues:

1) the experience of river basin development in terms of principal achievements;

2) the experience in terms of principal costs;

3) the question of applying model approaches to integrated river basin development and their effectiveness;

4) the strengths and weaknesses of river basin institutions;

5) the role of local organizations and their relationship with government, PVO's, the private sector, and donors and;

6) the role of research to improve river basin development.

In the closing workshops of the conference the participants reviewed the most important issues raised in the plenary sessions and then worked collectively to recommend related guidelines for action. The purpose of convening a large and diversified representation [1] of river basin development experience was to learn from the past, suggest appropriate corrective measures, and broaden the horizons for river basin development in the form of proposals envisioning a more comprehensive framework for institutional involvement.

CONFERENCE OBJECTIVES

A major incentive behind A.I.D.'s interests to promote a multi-institutional meeting of African river basin experts stemmed from SARSA (Settlement and Resource System Analysis Cooperative Agreement) river basin research projects. The research staff of SARSA comprises expertise in the planning and management of regional development concerned with the human, institutional, and resource capacities of a region. As part of SARSA's work in regional development, river basin development in Africa emerged as a separate research topic. Since 1985, a SARSA team of analysts from African institutions in five countries, Clark University, and the Institute for Development Anthropology have examined the past record and identified a host of issues and problems associated with developments in Africa's river basins. The research conducted by SARSA and financed by U.S.A.I.D's Africa Bureau produced a number of reports and case studies, as well as an overview document and executive summary. In the six basin-specific studies, SARSA assessed the outcome of development efforts and examined the roles of institutions operating at diverse levels of action and coordination. Other background reports discussed river

[1] See Annex II for a list of participants and their affiliations.

basin planning approaches in general and presented a model for institutional analysis suitable to African conditions based on the case studies.

One of the most useful SARSA contributions for river basin analysis was an Overview report which synthesized the total research activity, reviewed the major issues, and proposed recommendations targeted to both A.I.D. and river basin institutions in general. The Overview document was distributed to all participants prior to convening the May conference for purposes of stimulating and unifying discussion so as to address a common set of problems and issues.

At the opening of the conference, the U.S. host organizations challenged participants to pursue a critical and open discussion of the seemingly unsatisfactory record to date on river basin approaches to development in Africa. Without pointing a finger at any particular river basin experience or embellishing the role of multilateral, bilateral, or national agencies, the spirit of the conference sought to maximize the opportunity to invite witness to a wide range of public and private development related experiences. It was intended that such a forum would encourage an open examination of the past record and could best lay the foundations to propose appropriate strategies for the future.

The timing of the meeting had significance for both U.S. policy and upcoming international events directed at improving river basin development. Spokesmen for A.I.D. stated that the agency's Africa Bureau was seeking inputs from the conference to reexamine its own guidelines for development linked to a river basin approach. On a broader level, the international conference would serve as a preparatory meeting for the upcoming United Nations Interregional Symposium on River and Lake Basin Development with emphasis on the Africa Region, to be held in Addis Ababa, Ethiopia from 10 to 15 October 1988.

The purpose of the river basin conference was twofold. Conference participants were asked to discuss and examine critically the record to date with African river basin development. It was expected that the thirty-five or more representatives attending the meeting would significantly expand the SARSA findings by offering a wide range of inputs focusing on specific achievements and problems in their area of river basin development. The second purpose was to propose and discuss future strategies for development. Special focus was on the institutional requirements for planning, implementing, and evaluating those strategies for the rest of the century which benefit larger numbers of people through increased production, enterprise development, and employment generation in an environmentally sound fashion.

THE EXPERIENCE OF AFRICAN RIVER BASIN DEVELOPMENT

The viewpoint of Africa's general record expressed by the majority of participants was that river basin development schemes were important to the future well-being of the continent, but the anticipated results relating to projected goals and benefits on an integrated and multiple purpose basis had not materialized to positively affect the lives of large numbers of people in African countries. The general conclusion was that river basin development, in terms of projects and programs favoring change, had not accomplished their potential as a tool for comprehensive development at the national and regional scale and had least affected local level development. The experience in most countries points to the fact that while integrated river basin development plans have been formulated and used to justify significant funding for basin surveys, project designs, and the construction of large dams, development outcomes have been generally disappointing.

It was noted that serious negative environmental and socioeconomic effects have followed in the wake of African dam construction and the creation of large, man-made lakes. This kind of outcome increased the need for a more balanced assessment of achievements to date together with an honest investigation of the potentials for river basin development and definition of the strategies for realizing that potential.

Change in the Perception of Hydropower Schemes

One aspect of the past record was the predominance of large hydropower schemes in national plans requiring huge investments aimed at dam construction projects. In terms of national energy development, observers pointed out that such investments in the Zambezi, Volta, and Tana river basins had provided some regions of Africa with relatively cheap sources of hydroelectricity. Nonetheless, the practice of assigning hydropower production the absolute priority over other goals connected with regional development was no longer acceptable in the general view of the conference representatives. River basin decision making and planning that focused only on a single purpose approach was an inadequate response to the more comprehensive needs that required development of local household production capacities as well as economic growth at the national level. Definition of an appropriate planning process to provide for a comprehensive system of planning and coordination that includes regional and local development priorities was a persistent theme heard throughout the conference.

Different Approaches and Criteria

Participants involved in recent basin development planning exercises, such as the Juba Valley effort in Somalia and the Senegal Basin's OMVS, pointed out that planning methods were available to ease some of the past constraints to development planning and management. Significant advances have been accomplished in the area of management, computerized data and information systems, and the potential for using remote sensing techniques. International and bilateral agencies have built up considerable learning experience in assisting African countries and specific institutions. Some of these bilateral and multilateral assistance relationships have initiated positive results, for instance in lake fisheries, in downstream agriculture, and in pilot efforts to promote recessional agriculture around lake perimeters.

Individual cases of effective and sustained management had been achieved primarily on a sector by sector basis. The effective management of planning and implementation of hydroelectric systems was a success that many participants would hope to see repeated by other management systems, attuned to a broader agenda of basin development purposes. The examples of the Volta and Tana River authorities and Kariba dam's hydropower production were cited as positive, but sectoral, forms of river basin management. On the other hand, conference representatives of local agriculture and irrigation tenant unions from Zambia and the Sudan provided examples of largely single-purpose, national agencies devoted either to energy or large-scale commerical irrigation that were unresponsive to the needs of local farmers. In both cases, local organizations had been affected by basin projects but did not effectively or equitably participate in the distribution and management benefits achieved by the agricultural sector.

Compared with the management operations associated with hydropower, some river basin institutions had been created to promote a more comprehensive set of regional and local development activities from the start. This regional development type of river basin agency required much more interaction with other sectoral operatives in the basin and depended on a more decentralized approach endorsing local involvement, in comparison with the largely autonomous and highly centralized hydroelectric style of management.

The representative from Kenya's Lake Victoria Basin outlined the legislation and activities of such a regional lake basin authority created to promote multiple purposes with important linkages to locally managed projects. Another international model of African regional cooperation and collaboration aimed at ensuring a more balanced or coordinated approach among multisectoral national plans for the Zambezi River Basin was suggested by the recent experience of SADCC riparian states. Under the authority of the Action Plan for the Environmentally Sound Management of the Common Zambezi River Action Plan - ZACPLAN, overall co-ordination has been delegated to SADCC's Sector Co-ordinator for Soil and Water Conservation and Land Utilization (SWCLU). The head of this Co-ordinate unit reported to the conference on the SADCC approach emphasizing the decentralized aspect of such a regional model where individual member governments retain the ultimate responsibility for carrying out basin projects.

The issues of technology and management practices applied to problems of evaluating economic costs, assessments of environmental impact, and adequate provision for the costs of resettlement due to dam construction drew considerable concern among participants, despite significant advances in the quality and volume of technical applications. Some participants referred to the dominance of economic analyses that did not take into consideration the

full social and environmental costs connected with a project. One representative expressed the frustration surrounding the inability of institutions to effectively apply the technological devices of planning, gathering data, and methods of impact assessments that were already available.

Despite these tools and the quantity of published reports, river basin development activities were costly and devoid of economic, social, and ecological measures. Plans and studies have often had not reached their objectives or were not implemented. One participant stated that information of a technical nature had not influenced decision makers to the extent anticipated and "that something happens between the study and implementation." Technical plans often did not incorporate the political agendas of the national governments involved, and donors had not shown a willingness to apprise governments of the actual economic, social, and environmental costs.

A Multiobjective Planning Approach

The concept of an ideal planning approach or single model for river basin development was rejected in favor of a more flexible, multiobjective planning and evaluation process, denoting an integrated approach. Multiobjective planning and plan implementation require that the full spectrum of goals and alternatives be assessed and coordinated, and not independently of their impacts, from national, regional, local, and environmental perspectives. Given the different emphases on the meaning of integrated river basin development, participants joined with SARSA in defining river basin development as a process that is too important and too complex to leave only to recipient governments, river basin authorities, or collaborating donor agencies. Participants at the conference, representing local organizations of riparian populations, private sector firms, private voluntary/

nongovernmental organizations (PVO's/NGO's), research institutions and universities, advocated expanding their roles in river basin development. Such a comprehensive institutional framework could treat the wide range of goals justified under integrated development. These ranged from national economic integration to the need for enhancing local production systems, thus facilitating institutional building at all levels.

The goals for enhancing Africa's water resource use were considered a central priority in justifying river basin development on the continent. To some extent, physical conditions of aridity and scarcity for agricultural, drinking, and sanitation purposes dictated that water will continue to be a focal point (although not the only consideration in a multiobjective approach) for basin planning that seeks to improve production systems and human well-being. The conference supported the strategy of employing different scales and forms of water controls that can interact with local systems in an environmentally suitable fashion, including the possibilities of surface and groundwater storage as a necessary component of basin plans.

Physical Conditions

The importance of considering the physical characteristics of river basins was emphasized to underscore the development potential of utilizing land, water, and human resources in an environmentally sound fashion. Some of the most important considerations were: (1) the arid conditions in many African basins dictate that every effort be made to develop water resources appropriately; (2) the occurrence of large, seasonal, and annual variations of water flow must significantly figure in goals and planning for basin development; and (3) large populations which depend on riverine floods for local agriculture are an important social-ecological consideration for river basin planning and development.

Institutional Aspects

From an institutional perspective derived from past experience, the following three factors were identified:

1) One of the failures in the design of projects was attributed to the fact that the donor community and national governments did not involve effective institutions as a practical means for regionally and locally based organizations to play a more direct role in basin development plans from the beginning of the process. In the past, an over-emphasis on economic criteria as a justification for investing in large-scale water control projects serving the interests of hydroelectricity and large-scale irrigation had isolated goal-setting and plan-making to a few donor agencies and their counterparts in government ministries. This tended to build up a narrow decision making structure largely unresponsive to other objectives, and excluded the beneficiaries and representatives of local groups.

2) Another problem, related to the first factor, was the lack of coordination between the multiple donors involved in supporting river basin development and participating agencies or national ministries. Other institutions such as university research units and those directly affected by the investments were not only left outside existing or formal coordinating networks but were also never asked to effectively participate in ongoing planning decisions.

3) Reports on the implementation of projects, especially those destined to increase local opportunities for agricultural production, suggested that the problems of failing to include appropriate local input and participation were related to the problems of poor operation and maintenance particularly for irrigation schemes.

SYNTHESIS OF CONFERENCE THEMES

Themes that emerged in a final session, charged with synthesizing the previous discussions were expressed as follows:

1) River basin development is a process of decision making and management involving organization and institutional development as well as technical issues.

2) New systems and techniques are available for gathering and displaying information that aid decision making and evaluation of decisions.

3) It is accepted practice that broader based analyses are vital to providing information needed for decisions that cover social, economic, and environmentally related concerns.

4) River basin planners and others have mechanisms at hand that are based on a better learning process from past experience than in previous periods.

5) "Management" technology is now available to improve many aspects of river basin development, although it was noted that such new management technology is not always applied.

At the same time, a short list of general priorities emerged for improving river basin development. Selected items for improvement were:

1) the need for a better definition of development objectives;

2) the use of better analyses of alternative modes of achieving objectives based on more complete information sets;

3) a better definition of the mix of institutions responsible for achieving objectives;

4) better coordination and linkages between institutions;

5) change towards allocating more resources to the different institutions involved and providing the financial power to move towards their objectives, and;

6) agreement and coordination among donors on the most effective approaches to development in general and for specific river basins.

PRESENTATION OF WORKSHOP RECOMMENDATIONS

All the participants were active in a final day of workshop events that refined the outcomes of previous presentations and performed the task of organizing the most important ideas into a set of recommendations and statements under the headings of:

1) definition of a workable, analytical frame of reference for river basin planning and evaluation that specifically takes into account the unique characteristics of African river basins;

2) regional institutions;

3) the role of local organizations, and;

4) the importance of research.

The text that follows is a summary of each workshop. Wherever appropriate, an individual contribution to a specific topic was included to illustrate the kinds of inputs presented throughout the conference.

An Analytical Frame of Reference for Integrated River Basin Development in Africa

Chairman - Charles W. Howe
Rapporteur - Jan Gerards

The group was charged with defining a workable, analytical process for river basin planning and evaluation that specifically takes into account the unique characteristics of African river basins.

The unique features of African river basins are: (a) aridity of the lands of the river basin ; (b) very large seasonal and year-to-year variation in river flows; and (c) large populations in the basins that are dependent on seasonal, uncontrolled floods.

These features imply at least the following points: (a) that water must be a focal point (although not the only one) for planning improvements in production systems and human well-being; (b) water control, including the possibilities of surface and groundwater storage, is a necessary component of basin plans; and (c) the needs of the populations dependent on the traditional flood patterns must be attended to as flows are modified.

Environment for Productive River Basin Planning

Planners must be clear on the national objectives sought through river basin development and on the weights that the political decision process places on each objective. The objectives used in the United States are national economic efficiency (maximization of net benefits from a national viewpoint), regional economic development, environmental enhancement and protection, and social/cultural impacts such as equity or opportunity, preservation of traditional cultures, human health, etc. In Third World countries, additional objectives may be sought, including improving

balance-of-payments, some degree of food self-sufficiency, etc. River basin planners must be aware of these objectives and their relative importance.

Another vital feature of the planning environment is that the rules of the game relating to the relationships among donors, the national government, and the planning agency must be clearly spelled out and not subject to whimsical revision. There are many examples in which interventions by donors and the national government (e.g., imposition of new constraints, ruling out of project alternatives, etc.) have negated work by the river basin planning agency and have demoralized attempts to do professional, objective work.

The Planning Process

The treatment of the planning process in this paper will be somewhat idealistic, recognizing that even in the most industrialized nations water planning involves ad hoc decisions and political interventions. The greater resource scarcity and greater dependence on water that characterizes Third World countries, however, makes it even more costly to deviate from an explicit, rational planning process.

The river basin serves as a logical framework for planning the integrated development of the human and natural resources of the basin. The time period involved for significant development may be long, involving changes in production systems, cultural change and adaptation, etc. Thus, a long-time horizon must be used in planning, especially in the early conceptualization of development possibilities. This time period is likely to be substantially longer than that implied by the use of frequently dictated high discount rates. In addition, to the extent that noneconomic objectives are given weight in selecting and designing projects, donors and national governments must allow for longer periods of continued support, since the basin portfolio

of projects will have a lower flow of net benefits in forms that can be charged for or taxed to repay operating, maintenance, and capital costs.

It is important to emphasize that planning must be an iterative process, both within the planning team and between government. As prefeasibility studies are run, new project opportunities will be discovered and old ones discarded or redesigned. As this knowledge is gained, it may be desirable to ask the government for new guidelines or the relaxation of old ones. While planning usually leads to a document called "a plan," that plan is always subject to change in the light of new information and changing values. It is important that these iteratives follow an explicit sequence of steps so that the team always knows what activities come next.

Within the environment established above, the first planning step is to identify potentially productive programs and projects for resource development. The identification of candidate projects and programs is based on an imaginative utilization of personal acquaintance with the basin and the interpretation of the initial set of data regarding the resources and behavior of the basin. An important initial question is, "How large a data base on the hydrology, soils, population, etc. is necessary to initiate planning.?" If data were free and if the passage of more time didn't matter, having more data for project identification and basin planning would always be better than having less. Data gathering, however, is costly and usually takes planning team time. How to determine how much data is enough to permit initial conceptualization and planning to begin is an unsettled issue that, at present, can be settled only through the judgment of experienced planners. Naturally, the data base can be expanded and refined as planning progresses.

Dams or other major structures must not be the focus of the planning effort. "Without-dam" scenarios may turn out to be the most beneficial.

Indeed, there are examples from contemporary planning experience in which the progression of planning showed that dams that had been taken for granted were, in fact, not needed or not desirable.

With or without dams, there are many activities that should be considered for execution before the dam is built or that do not depend on the dam's existence for their effectiveness. Examples would be the design of health programs, village water supply, educational programs, marketing systems, and other infrastructure. Indeed, since major construction is subject to many delays, one must avoid the "wait until the dam is built" mode of thinking, since valuable opportunities to improve human well-being will be lost.

River basin planning subsumes a definition of the "river basin." While river basins may not correspond to political or administrative boundaries, it is agreed that planning must proceed on the basis of the entire basin to avoid omission of important downstream effects. The cases are legion in which negative downstream effects on fisheries, decrue agriculture, livestock grazing, fishing, and settlement patterns have been ignored. In cases of reservoir construction, upstream impacts and opportunities (e.g., drawdown cropping and grazing) are also often ignored. Thus, the entire basin should be included in planning, although project execution and management can be allocated to subjurisdictions within the basin.

As the initial data base is compiled, it should be placed in a modern, computer, data base system from which it can easily be recalled and manipulated. A major use of the data base will be the estimations for the computer models of the hydrology, regional economy, agricultural production, etc. These models play a major role in the simulation of the river basin system and, ultimately, in the evaluation of the projects in a full systems context.

For each purpose to be served (flood control, water supply, hydropower, irrigation) and for each project identified, alternative approaches and designs must be given at least preliminary evaluation. For example, to accomplish flood control, storage, flood walls and dikes, and the location of economic activities are all viable alternatives. For a given project that has been identified, different sizes, spillways designs, and mixes of outputs should be given preliminary evaluation, so that the most appropriate can be selected. A recommended practice when multiple objectives have been specified (economic efficiency, environmental protection, social equity, etc.) is to design, in very preliminary fashion, a set of project alternatives, each one favoring the attainment of a particular objective. The evaluation of these alternatives in terms of several objectives then provides measures of the trade-offs among the objectives.

After the conceptualization of the river basin possibilities has been completed and the component projects and their alternatives have been evaluated, it is time for feedback to the political decision makers, providing them with summaries of the alternative development scenarios and their pay-offs. This may elicit new guidelines and/or clearer statements of preferences. This feedback finally should lead to a draft formulation of the river basin master plan.

In addition to the identification, design, and evaluation of the usual structural and nonstructural alternatives, the planning process should include lobbying government for appropriate changes in national policies that affect river basin resources and their transformation within the plan. Major examples would be land use and tenure policy, water law, and regulations relating to water use, roles of public and private sectors, environmental standards, and interinstitutional relationships. For example, the absence of

land tenure policies may make it impossible to target certain beneficiary groups because land development or irrigation may be followed by land take-over by politically powerful groups. If water law does not assure security of water availability for the farmer, the farmer will not invest in the on-farm distribution systems that are needed.

Other Important Points Involved in Planning

It is vital that indigenous planning capability be developed early enough to oversee the work of consulting engineers and the contract letting process. Nearly all contracts for assistance in planning and design call for the training of counterpart personnel, both on-the-job and in special schools. However, adequate budgetary provision for this function is almost never provided. Much more emphasis must be placed on such training.

Host countries must also be helped in developing appropriate training institutions so as to provide a continuing supply of newly trained indigenous personnel--rather than continuing to send them overseas. Training institutions can be universities, technical colleges, or short-term training schools.

The timing of investments is an important decision. Dams have often been built prematurely, wasting capital and other resources. Capacity should be built in keeping with the growth of demand. Another important point is that irreversible changes in the physical and living environments should be avoided whenever there is a real alternative, even if some economic benefits are lost as a result.

Finally, it is recognized that many planning situations are "inherited" from earlier eras, with some structures, policies, and operating procedures already in place. Then suboptimization in the light of current circumstances

is vital. Policies, operating procedures and (sometimes) even structures can be changed to conform to current needs.

Regional Institutions

Chairman - E.L. Quartey
Rapporteur - Miguel Solanes

The aim of this workshop was to suggest guidelines for river basin authorities operating at both the international and national level. Regional institutions are often viewed as the instruments of national policies which govern development and especially those relating to water resource use. Regional agencies normally interact with international lenders and donor agencies and, therefore, are directly influenced to a great degree by the international aid community. National policies should direct regional basin authorities to institute mechanisms and programs which ensure that water related organizations operate within an institutional framework. This would insure that water users have security about their rights on lands and water to provide for sharing and participation on an equitable basis from the benefits derived from productive activities depending on water.

Donors should cooperate in the coordination of external assistance, the determination of common criteria for the assessment of programs and projects, and in the setting of guidelines for data collection, processing, and utilization with particular attention to building up African capabilities in the areas of planning and monitoring.

Role of River Basin Authorities. River basin authorities can be characterized according to two major types: (a) international regional authorities,

and (b) national regional authorities. Functions will be different in each case. Organizations will, therefore, be different.

National Authorities

In the case of national authorities, the essential functions are:

1) To manage the water resources of the basin according to national objectives which the conference suggests should include development for people living in the country. Therefore, management should go beyond hydropower management (concern) to include other aspects of water management.[2]

2) To coordinate the overall management of the basin, bringing together all institutional actors in the basin to resolve conflict and to promote better use of the human water and land resources of the river basins.

The role and potential of regional and local authorities and of the private sector, in executing water programs and providing water related resources should be stressed. To such an end, national governments should ensure that local governments have appropriate institutional capabilities and a share of the resources of the country adequate to their responsibilities and needs. National governments should also provide an institutional framework allowing the participation of the private sector and public institutions other than the river basin authority in the performance of water related activities.

Coordination should take place within the framework of a policy defining the objectives and purposes of basin programs, consisting of national or regional development, promotion of well-being, and protection of the resource base.

[2] Emphasis is primarily on institutional structures. The objectives of planning by such institutions, however, should be to implement policy programs and projects for improving the quality of life for people.

Coordination should take place:

(a) vertically, among national, regional, and local levels of government;

(b) horizontally, among the agencies within the same level of government;

(c) functionally, among the different assistance and financial organizations working within the same river basin.

The assignment of responsibilities resulting from the coordination process should be taken into account by the national government when allocating resources to the different agencies and bodies involved in water development and related activities.

Two additional functions should be added to the responsibilities of basin agencies. One is the increased use of communication media to translate objectives into implementation. The second is the marketing and promotion of programs and projects so as to increase the well-being of the people.

International River Basins

Planning responsibilities in preliminary stages should be ascribed to the individual member states comprising the regional river basin authority to ensure:

1) that the plans reflect national economic development needs objectives; and that

2) the expectations of the individual member states vis-a-vis the river basin authority are well defined.

Formulation of plans by the respective member states should serve to strengthen national planning entities and should take account of comparative advantages among the participating countries.

The role of the regional river basin authority in the post-preliminary stages should be to reconcile the individual plans formulated by the national entities and to propose several alternative comprehensive plans. To such

end, both national and regional authorities should be adequately staffed. The river basin authority should ensure the standardization of the data collection sets to avoid contradiction.

The member states together will then decide on the optimal comprehensive plan and also ensure that appropriate staff is available to accomplish these ends.

Once the decision is made, the task of implementation will be the responsibility of the member states on a national or joint basis. However, when appropriate and justified on efficiency grounds, river basin organizations would be entrusted with implementation responsibilities by the member states.

With regard to the relationship between the regional authority and the donors, it is recommended that a consultative group be formed to include the regional authority, the member states, and potential financiers and that it should convene as regularly as possible to ensure that integrated river basin planning is accomplished. The member states should lead this consultative group.

Local Organizations

Chairman: John Milimo
Rapporteur: Peter Little

The issue of strengthening institutional capabilities associated with river basin development requires a closer examination of the role of local organizations. For integrated development to occur, riverine production systems should be enhanced rather than ignored, and populations whose lives are affected by a river basin project must be involved in decision making, planning, and implementation. The participation of local

organizations has broader implications for sustainability and continuity of river basin projects. Hence, the major theme is the involvement and integral role to be played by local groups in the process of river basin development.

National Policymaking

Most river basin projects are designed in accordance with national objectives and are the product of national goverment and international donor collaboration. National planners must therefore make a concerted effort to plan with and for local institutions whose vested interest may serve the fulfillment of coordinated national, regional, and local level needs. Too often, local, rural populations are bypassed in terms of benefits. Three mechanisms are suggested for implementing local participation:

1) Donors, accustomed to using their leverage in certain development projects, could apply that same leverage in their dialogue with host governments to request the participation of local groups in the form of organizations based on either local initiatives or outside initiatives. Externally assisted organizations need not undermine local initiative. There have been cases where too much external control and guidance have overshadowed or discouraged local efforts involving attempts at community managed projects.

2) Nongovernmental organizations (NGOs) can be instrumental as intermediaries between local, grassroots organizations and national or regional level institutions. The NGOs can act as communication facilitators in two directions: to articulate the goals and needs of local groups and act on their behalf, and to transmit the objectives of the national authorities to the local level.

3. Fiscal decentralization is a cornerstone to divesting more decision making power to the local level and is crucial to building up and securing the capacity of local institutions to operate, maintain, and manage projects and schemes.

These mechanisms offer a means to improve policy guidelines for local participation intended for national governments and participating donors.

Local Participation: A Justification

An emphasis on local populations or farmers, and not on institutions per se, which generally implies government and externally initiated organizations, improves chances of ensuring the sustainability of development schemes. Seeking local participation will in the long-run be more cost-effective than not because it encourages initiative and enterprise which may serve local and national development goals, and the managerial and operational responsibilities will not necessitate indefinite employment of expatriate personnel. Part of that incentive calls for revenue-generating capacities that compare favorably with wage opportunities external to the local organization, as in the case of a cooperative society.

Local organizations need to be involved in all phases of a river basin project inclusive of large-scale hydropower projects and dams, so that the incentive to cooperate and to sustain the project will be present from the beginning and throughout. They also need to be involved in land tenure issues and should be able to expect security rights over land and water in view of the problem of competition for resources. Additionally, if user fees are charged, they need to be linked to the income-generating activity of the local organization.

Failure to consult with local people may later explain inappropriate and wasteful spending on the part of the financiers of development schemes. One case in point was the World Bank sponsored Rehabilitation Scheme in New Halfa, Sudan which brought in tractors, new cars,

inappropriate housing, etc., skirting the development needs of the tenants on the scheme.

One caveat with regard to fostering the development of local organizations is that it takes time, at least five years. A power structure and leadership capability need to be built up and solidified before operations begin to run smoothly. Government authorities often do not even allow local organizations to operate without their intervention for fear they will become too autonomous and, hence, too powerful.

The Interface between Local Institutions and Government Institutions

Private voluntary organizations and local indigenous NGOs have historically been the ones to bridge the communication gap between local organizations and ministries, parastatals, and regional and national authorities. Tenant farmers and water user associations are the kinds of local groups to which they offer some technical, managerial, and advisory support towards achieving greater self-reliance. The PVOs and NGOs also make the initial contact with local people when a development project is being planned.

In general, there is a need for what could be called "linking organizations" that mediate between national and local institutions to facilitate communication, but in so doing would also improve coordination of activities and reduce overlap, duplication, and competition. One example of this concept is the district council in Zambia. It is a small, geographical, administrative unit charged with the responsibility of development of its district. The district governor is appointed by the president of the Republic of Zambia. The district does rely on the central treasury for its funds, which can be a constraint in times of economic

crisis. Although in Zambia full-scale decentralization has not yet materialized, it is an attempt at uniform and organized devolution of power.

Local organizations should at least have some representation in institutions involved in river basin development. District level organizations provide a vehicle for input of the local people. The Zambian district council is one example; another is the district development committee, which joins government and local representatives. Although the latter has been tried in Kenya, the record is a poor one because the larger government organizations frequently pay lip service to the district level organizations.

Resistance to decentralization or transferring responsibilities to smaller institutions can lead to increased tension between the national and local levels. The Gezira Scheme (Sudan) is a case in point. The Gezira Board and local Tenants' Union found themselves in an adversarial rather than a cooperating relationship.

The Need for Training

Training of local, indigenous groups calls for greater commitment to the task on the part of donor organizations, host governments, and expariate firms. Training is needed in four major areas:

1) management skills;
2) maintenance and operations;
3) fiscal responsibility and accounting;
4) health and environmental education.

Where possible, the job of training people to carry out tasks normally assumed by expatriate personnel should be done by the domestic private sector

and local firms. Training in project planning and in bilateral and multilateral programs in general should be given high priority.

The Importance of Research for River Basin Development

Chairman - Chris Magadza
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The aim of this workshop was to underscore the importance of multidisciplinary research that is an essential component of river basin planning and management. One commentator stated that the question should be reformulated from "how can research improve river basin development?" to "how can river basin development be planned without research?" The workshop identified as a major constraint the lack of African researchers in disciplines related to river basin management. The group proceeded to outline the needs in the area of training.

Training

The experience in the past had evolved a strategy that relied on higher education training available in donor countries. Donor agencies had supported such a strategy and in some cases contributed to an idea that sufficient investment had already been made for training Africans. Such a dependence on existing non-African educational centers for training had contributed to the low level of research capacity in Africa as demonstrated in the following trends:

1) African beneficiaries either resettled in their host country after completing their training or had moved on to new positions with international agencies, contributing to a "brain-drain" situation.

2) The unavailability or lack of access to higher degree specialization possibilities within African countries contributes to promotions largely for administrative posts and ignores the needs for trained personnel in more operational fields.

3) The content of training programs is unsuitable or outdated vis-a-vis the multidisciplinary nature of river basin analysis and management. The fact that in the past, environmental problems now facing the African continent were not the object of curriculum for training was cited as an example of outdatedness. Reference made to current issues surrounding land tenure was another example of new concerns to include in education and training.
4) Post-graduate education in Africa is in decline, due to the declining value of African currencies which impacts negatively on maintenance of facilities and the low priority of governments in general to supporting African university graduate programs.

These constraints to capacitating African trained river basin specialists led to a different strategy proposed by the workshop to increase training and manpower for research.

Research and Information

In terms of the problem of information flow, the workshop noted the general lack of rapport and absence of exchange of information between government agencies executing projects, on the one hand, and universities and national research institutes, on the other hand, in project planning and implementation.

A related problem centered on the low capacity of African scientists to acquire technical information relevant to their work and also the lack of adequate information transfer from researchers to users (planners, project managers, farmers, etc.). Specific suggestions to improve information flow are included in the following section on recommendations.

Recommendations

1) Donors and lending agencies, for instance the case of U.S.A.I.D. assisted by SARSA, should identify viable, relevant African institutions for the purpose of assisting them to build up meaningful research capability in lake basin management research.

2) River basin development research programs, including SARSA and other such efforts, in cooperation with the African Academy of Sciences should review the graduate training in African universities with a view to recommending graduate training strategies for environmental and other areas of need in river basin development.

3) Donor agencies should consider supplementing post graduate stipends to encourge graduate studies in African universities. The SAREC/University Lake Kariba model where Zimbabwean graduate students participated in development oriented programs under SAREC funding was cited as an example.

4) Research institutes both at universities and other national institutes in Africa should be strengthened.

5) Donor/lending agencies should assist in improving African researchers' access to relevant scientific and technical information.

6) The entire question of informatics technology in Africa needs review with a view to recommendations for appropriate strategies.

7) It is imperative that research results be apparent to project administrators. Research findings were often left inadequately interpreted for project managers to translate into project programs. This is a problem of communication of research as a way to facilitate decision making.

The purpose of this strategy is to create a program for training river basin specialists within the existing African institutional infrastructure. The program would be tailored to existing institutional needs in the areas of research and staff. Training of personnel would take place in Africa where there already is a demand to respond to the problems and goals for river basin planning and management.

Annex I

UN RESUME DES COMPTES RENDUS DE LA CONFERENCE SUR:

L'EXPERIENCE AFRICAINE AVEC LE DEVELOPPEMENT DE BASSINS FLUVIAUX: LES ACCOMPLISSEMENTS JUSQU'ICI, LE ROLE DES INSTITUTIONS ET LES STRATEGIES POUR L'AVENIR

par

Richard Perritt

Traduction française par Mary Picard

Introduction

Une conférence internationale sur l'Expérience Africaine avec le Développement de Bassins Fluviaux, soutenue par le Bureau pour la Science et la Technologie et le Bureau Africain de l'Agence pour le Développement International des Etats-Unis (U.S.A.I.D.), a eu lieu à Easton, Maryland du 25 au 27 mai, 1988. Organisé sous les auspices du programme de recherches de l'U.S.A.I.D., intitulé Settlement and Resource Systems Analysis (S.A.R.S.A.), l'évènement a été conçu non seulement dans l'intérêt de l'U.S.A.I.D. mais dans l'intérêt d'une diversité d'institutions internationales et africaines.

La notion du développement de bassins fluviaux date d'un projet de recherches commencé en 1985 sous l'égide de la Convention Coopérative de S.A.R.S.A. et a conduit un groupe de rechercheurs de Clark University, de l'Institute for Development Anthropology (I.D.A.) et d'institutions africaines provenant de cinq pays à examiner l'histoire de cette expérience et à identifier un certain nombre de questions et de problèmes liés surtout au rôle des institutions.

Les travaux de recherche qui couvraient six bassins spécifiques ont abouti à un compte rendu (Vue Globale) qui a été distribué aux participants de la conférence avant leur convocation en mai. Plus de cinquante experts internationaux, trente-cinq institutions en tout, ont été invités à porter leur expérience sur l'évaluation d'activités telles que l'aménagement et la coordination de bassins fluviaux; la gestion des projets; les liaisons avec les organisations locales; la mise en jeu des bailleurs de fonds internationaux; et les méthodes et les priorités de recherche. Les subventionneurs américains ont poussé les participants à

poursuivre une discussion critique et ouverte sur les méthodes d'attaque concernant le développement de bassins fluviaux en Afrique dont l'exécution jusqu'ici apparaissait peu satisfaisante.

Les Objectifs

Les participants de la conférence représentaient un éventail d'intérêts se rapportant au développement de bassins fluviaux: les organisations locales des populations riveraines, le secteur privé, les organisations bénévoles/non-gouvernementales privées (NGO), les instituts de recherches et les universités, et les bailleurs de fonds. Il a été prévu que les trente-cinq ou plus représentants élargiraient d'une manière significative les constatations de S.A.R.S.A. en contribuant leurs connaissances étendues sur les accomplissements et les problèmes abordés dans leurs domaines particuliers du sujet.

La convocation d'une représentation si grande et diversifiée de l'expérience avec les bassins fluviaux a eu pour but de produire des stratégies de développement pour l'avenir à travers une examination ouverte et critique de l'expérience jusqu'ici. L'accent a été mis spécialement sur les exigences institutionnelles pour la planification, la mise en oeuvre, et l'évaluation des stratégies pour le reste du siècle qui apporteraient des avantages à un plus grand nombre de gens sous la forme d'un accroissement de la production, du développement des entreprises privées, et de la génération d'emplois tout en tenant compte des effets sur l'environnement. Une évaluation équilibrée des accomplissements jusqu'ici, y compris des recherches honnêtes sur les possibilités de développement des bassins fluviaux, suivie d'une définition précise des stratégies pour réaliser ces potentiels reste un but important en vue des

mauvaises conséquences socio-économiques et écologiques qui se sont développées à la suite de la construction de barrages et de la création de bassins artificiels en Afrique.

Les présentations correspondant aux séances plénières ont mis au jour six questions principales:

1. l'expérience concernant les accomplissements principaux dans le développement de bassins fluviaux;
2. l'expérience en ce qui concerne les coûts principaux;
3. l'emploi d'un modèle dans les approches au développement intégré de bassins fluviaux et la question de son efficacité;
4. les points forts et faibles des institutions de bassins fluviaux;
5. le rôle des organisations locales et leur rapport avec le gouvernement, les ONG, le secteur privé et les bailleurs de fonds, et;
6. le rôle de la recherche pour améliorer le développement de bassins fluviaux.

Dans les groupes de discussions finaux les participants ont révisé les questions les plus importantes posées dans les séances plénières et se sont mis à la tâche de rédiger des recommandations qui puissent être mises à exécution. L'ordre du jour a préparé suffisamment le terrain pour la formulation des propositions ayant trait au développement de bassins fluviaux, envisageant un cadre plus compréhensif pour l'engagement des institutions à tous les niveaux.

L'Expérience dans le Développement de Bassins Fluviaux Africains

D'après le point de vue de la plupart des participants sur l'histoire de l'expérience africaine en gros, les projets de développement de bassins fluviaux sont importants pour le bien-être du continent, mais les résultats actuels, en comparaison avec les buts et les bénéfices anticipés, et en fonction de la notion de développement intégré et multi-

objectif, n'ont pas été réalisés de façon à toucher d'une manière favorable à la vie d'un grand nombre de gens en Afrique. Le développement de bassins fluviaux, à travers des projets et des programmes visant un changement positif, n'a pas atteint son potentiel en tant que voie pour le développement d'ensemble aux niveaux national et régional et a bénéficié le moins le niveau local. L'expérience dans la plupart des pays démontre que, tandis que le développement intégré de bassins fluviaux fut traduit en plans qui ensuite furent utilisés comme justification pour le financement des études de bassins, des desseins de projets, et de la construction de grands barrages, les résultats dans le sens réel du terme "développement" ont été décevants.

Il a été constaté en particulier que les projets hydrauliques à grande échelle, malgré le fait de fournir une source peu chère d'hydro-électricité à quelques régions d'Afrique, n'offrent pas une réponse appropriée aux besoins plus larges tenant compte des systèmes de production ménagers. Les projets d'énergie hydraulique sont en général soutenus par un mode de gestion des bassins fluviaux basé sur les secteurs. Le mode multisectoriel de gestion dont le Bassin du Volta et le Bassin du Tana servent d'exemples, a été prise pour efficace mais non pas en matière de la distribution des bénéfices selon l'optique des cultivateurs locaux.

D'autres institutions de bassins fluviaux, par contraste avec le style de gestion bien autonome et centralisé des grands projets d'énergie hydraulique, furent établies afin de promouvoir dès le commencement un ensemble d'activités de développement régional et local. Le type d'agence de bassins fluviaux orienté vers le développement régional nécessitait des liens beaucoup plus étroits et réguliers avec d'autres secteurs dans le

bassin et a forcé une approche plus décentralisée et favorable au niveau local.

La définition d'un processus de planification convenable qui prévoie l'extension d'un système de planification et de coordination aux priorités de développement régionales et locales était l'orientation suivie au cours de la conférence. Un processus de planification et d'évaluation souple et multiobjectif, signifiant une approche intégrée, suppose que l'éventail complet de buts et de lignes de conduite soient soigneusement évalué et coordonné, et non pas indépendamment des effets qu'il porte, d'après les optiques nationales, régionales, locales et écologiques. Dans le cadre d'ensemble institutionnel s'incorporeraient les objectifs s'étendant de l'intégration économique nationale à l'amélioration des systèmes de production locaux. De là, l'accent mis sur la construction des institutions à tous les niveaux.

Des participants qui sont actuellement engagés dans des exercices de planification de bassins fluviaux sont témoins du progrès significatif accompli dans les techniques de planification disponibles. Cependant, il a été signalé par d'autres que le problème réside en l'application ainsi que dans les analyses économiques elles-mêmes. L'accentuation excessive sur les critères économiques caractéristique des plans de développement ne sert que de justification pour investir dans les projets d'aménagement d'eau à grande échelle destinés à la production de l'hydroélectricité et à l'irrigation à grande échelle. Il en résulte que la tâche de préparer les objectifs et les plans est confiée exclusivement à quelques agences de financement et à leurs partenaires dans les ministères. Ceci a eu tendance à créer une structure de prise de décisions étroite et insensible à d'autres objectifs ainsi qu'aux bénéficiaires et aux représentants des

groupements locaux.

L'eau comme ressource continuera à tenir la place centrale dans la planification de bassins fluviaux tant qu'il s'agira de l'Afrique pour des raisons d'aridité et de manque d'eau qui existe pour l'agriculture, pour les systèmes sanitaires, et pour l'eau potable. Une approche multiobjective viserait à améliorer les systèmes de production et le bien-être humain, surtout pour les populations riveraines. La conférence a soutenu la stratégie d'employer des échelles et formes différentes d'aménagements d'eau qui s'accordent bien avec les systèmes locaux de façon bien adaptée à l'environnement. Les aménagements tiendraient compte de la possibilité de réservoirs d'eau en surface et d'eau souterraine en tant que partie nécessaire de la planification.

Synthèse des Orientations de la Conférence

Dans une dernière séance organisée pour faire le point des discussions préalables, il en ressort les orientations suivantes:

1. Le développement de bassins fluviaux est un processus de prise de décision et de gestion dont le développement institutionnel fait nécessairement une partie centrale.

2. De nouveaux systèmes et techniques sont disponibles pour assembler et déployer les renseignements qui alimentent la prise de décisions et l'évaluation des décisions.

3. Il a été constaté que des analyses plus larges qui introduisent les aspects sociaux, économiques et écologiques sont indispensables au processus de prise de décisions.

4. Les planificateurs de bassins fluviaux et d'autres ont, grâce à l'expérience accumulée, à leur disposition des mécanismes qui se reposent sur une meilleure base de connaissances qu'à toute autre période.

5. La technologie de gestion destinée à améliorer les aspects de développement de bassins fluviaux est actuellement disponible bien qu'il ait été signalé que cette technologie n'est pas toujours appliquée.

De même une courte liste de priorités générales en matière de l'amélioration du développement de bassins fluviaux a été rédigée. Les questions choisies pour cette fin sont énumérées:

1. Une meilleure définition des objectifs de développement;

2. Une meilleure analyse de méthodes alternatives utilisées pour atteindre les objectifs qui sont basées sur des groupes de renseignements plus complets;

3. Une meilleure définition de la combinaison d'institutions responsables pour la mise en oeuvre des objectifs;

4. Une coordination plus développée et de meilleurs liens entre les institutions;

5. Un plus grand approvisionnement de resscurces destinées aux institutions différentes en question et la fourniture du pouvoir financier afin de faciliter l'achèvement des objectifs, et;

6. L'accord et la coordination des bailleurs de fonds à l'égard des approches les plus efficaces vers le développement en général et pour des bassin fluviaux spécifiques.

Annex II

THE AFRICAN EXPERIENCE WITH RIVER BASIN DEVELOPMENT: ACHIEVEMENTS TO DATE, THE ROLE OF INSTITUTIONS, AND STRATEGIES FOR THE FUTURE

A Conference at the
Tidewater Inn, Easton, Maryland
May 24-27, 1988

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