

Capacity Building in Research

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Abstract

This paper examines the importance, and some of the critical mechanics and means for building, over the long-term, a critical mass of professional indigenous researchers, policy analysts and economic managers who are able to better manage the development process in their respective developing countries. The paper also emphasizes the need to make better use of the existing indigenous capacities and institutions. Although coverage is broader, particular emphasis is placed on Sub-Saharan Africa (SSA), where the magnitude of the problem of low absorptive capacity has been quite telling. The paper starts by setting up the problem and defining the concept of capacity building. In this section, it also examines a number of factors that have frustrated capacity building efforts in SSA. Section two reviews some selected past and existing capacity building initiatives, and presents lessons drawn from these experiences. The last section discusses the implications of capacity building for the recently initiated research programmes funded by the Ministry of Foreign Affairs of the Royal Netherlands Government in a number of Southern countries, including Tanzania.

1. Background to the Problem

1.1 The Problem

It is increasingly recognized that sound policies are necessary, but often not a sufficient condition for economic development. To be effective, such policies must be sustainable. Policy sustainability presupposes, among other things, a strong sense of indigenous participation and ownership. Development also depends on the capacity of the society to analyze, adapt, initiate and manage change. Indeed, one of the major causes of the economic crisis facing SSA has been the lack of capacity in government and institutions to respond quickly and decisively to a rapidly changing political and economic environment (World Bank, 1989; 1991).

Although for quite a period governments in developing countries and the donor community have been working on capacity building in diverse ways, a vital gap—that of weak indigenous absorptive capacity—is not being

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adequately filled. Paradoxically, even where some limited capacity has been built, this has not been effectively utilised. In SSA this has remained so despite the respectable quantitative achievements in education and training during the past three decades. For example, African universities have grown from 6 in 1960 to over 100 today. The proportion of the indigenous teaching staff in SSA universities rose from 64% in 1978 to 84% in 1987. At the primary level, gross enrollment ratio rose from 36% in 1960 to 75% in 1983 (World Bank, 1988). Graduate output in the region also rose impressively from 200 in 1960 to 83,000 in 1987 (Saint, 1992).

1.2 Defining the Concepts

In the literature, the concepts of 'capacity building' and 'institutions' have been used differently in various contexts. In this paper, capacity building is conceived broadly along the lines suggested by the World Bank (1989:54) as constituting three distinct elements:

- (a) Human development, especially the provision of basic health, education, nutrition and technical skills.
- (b) The restructuring of many public and private institutions to create a context in which skilled workers can function effectively.
- (c) Political leadership that understands that institutions are fragile entities, painstakingly built up, easily destroyed, and therefore need sustained nurturing.

Following this broad conception of capacity building, it is possible to disaggregate an institution's capacity (e.g., a firm, sector or a country) into four totally interlocking disembodiment forms.

1. *Object-embodied form or 'technoware'*: tools, capital goods, land, intermediate goods, products, crops, physical equipment, machinery, physical processes, etc.
2. *People embodied form or 'humanware'*: understanding, capacity for systematic application of knowledge, know-how, human capability, human labour, specialized ideas, skills, problem-solving capacity, etc.
3. *Document-embodied form or 'inforware'*: knowledge about physical relationships, science and/or other forms of organized knowledge,

principles of physical and social phenomena, Research and development (R&D), technical information, specifications, standards, computer software, etc.

4. *Institution-embodied form or 'orgaware'*: organizational work assignment, day-to-day management operations, social arrangements, means for using and controlling factors of production, organization of products, processes, tools and devices for use by people, inter- and intra-firm networking, linkage with meso-institutions, etc.

The three crucial aspects that make up the concept of capacity building are therefore: human skills; effective institutions; and effective policy leadership. Human skills are necessary for identifying and measuring the likely impact of various development options, often under conditions of uncertainty and competing interests; for assessing trade-offs; for advising policy makers and managers on the feasibility of the various options within a given socio-economic context; and for recommending and charting out a specific course of action that is compatible with the economic and socio-political realities of a specific country. The translation of these functions into practical and persuasive policy advice requires not only technical competence but also a correct perception of the existing practical and bureaucratic systems, a creative and imaginative ability, effective communication skills, and a strong will to convince.

The role of institutions in fostering capacity building, and hence facilitating growth, is rather tricky. 'Institutions' may be interpreted at least in two ways. First, institutions can be the 'rules of the game' which for economists, provide the context—such as markets—in which actors make decisions. Alternatively, institutions can be organizations, typically as systems of non-market relations (Van Arkadie, 1989). Institutions as rules of the game consists of a set of rules, compliance procedures, or ethical behavior norms of a society or organization that facilitate coordination among people, and help to constrain the excessive behaviour of individuals (Rutlan and Hayami, 1984; Feeny, 1988). Under this conceptualization, interest has centered on the changes in these rules, and how they have affected society. Such broad conceptions of institutions seem to be more of an academic exercise, and of less operational interest to issues of applied research and capacity building.

Perhaps of more interest, as far as capacity building and policy making are concerned, is the interpretation of institutions in a narrow sense as organizations, i.e., government departments, public and private enterprises,

research and training centres, banks, hospitals, and the like. In this case, capacity building would be seen as measures intended to change or strengthen institutions to perform better according to chosen criteria of effectiveness. But even then a number of conceptual problems remain. Firstly, institutions may in their actual operation serve purposes quite different from those intended by their creators. Moreover, their roles may change in response to a changing environment (Van Arkadie, 1989: 157). It may therefore be difficult to state definitely which institutions seem essential to promote capacity building since observed failure or success of an institution may reveal little about its potential performance elsewhere. Nevertheless, it is possible to throw light on what constitutes a good or bad institution within a given economic and socio-political context.

Finally, SSA, like most regions that have achieved development success, also requires a politically enabling environment if the gains of capacity building are to be realized. Good governance, recognition of the roles played by various sectors and participants (e.g., private sector, women, etc.) in economic development; and the provision of appropriate incentives to retain trained capacity, are key considerations of capacity building.

1.3 Causes for Low Absorptive Capacity

The SSA experience suggests four main root causes for the low absorptive capacities on the continent: deficiency in appropriate skills; ineffective institutions; an unfavourable policy environment and incentive structures; and lack of a research culture.

During the early years of independence, the lack of capacity was primarily attributed to the absolute lack of trained personnel, and training institutions. The colonial education policy discriminated against the training of indigenous societies, and neglected investment in training institutions. For example, in the 1960s, the University of East Africa which served the three countries of Kenya, Tanzania, and Uganda, turned out a total of only 99 graduates for a combined population of 23 million (implying one graduate per 232,323 persons). In 1960 there were only six universities in the whole SSA region. Zaire is reported to have reached independence without a single national engineer, lawyer or doctor. Likewise, Zambia—with all its copper wealth—had only 100 university graduates and a thousand secondary school graduates. For SSA as a whole, only 3% of students received a secondary school education (World Bank, 1991). In Tanzania, at independence (1961), only

25% of the children were in school (Maliyamkono and Bagachwa, 1990). As a consequence only less than a quarter of the professional civil service posts in SSA were held by Africans during the early sixties.

In the first two decades after independence, SSA made impressive gains in school enrollments, literacy, public health and life expectancy—all being crucial prerequisites for capacity building. Since the late 1970s, however, there have been reversals in these areas. Some of the policies pursued by SSA governments exacerbated the situation. Many governments accorded the state a lead role in directly productive activities, as well as in the provision of services. This led to excessive government intervention, rigid bureaucracy, over-centralized government, and over-expansion of the public sector. By the mid-1980s, public employment accounted for over 50% of non-agricultural employment in Africa, in contrast to 36% in Asia, and only 27% in Latin America (World Bank, 1989). In Ghana, Mozambique, Nigeria and Tanzania, there were over 300 public enterprises accounting for more than 10% of each country's GDP (World Bank, 1994a; World Bank, 1989). In Tanzania, public organizations (parastatals) increased from about 43 in 1966 to 380 by 1979, and to about 450 by the mid-1980s. The returns in these public enterprises were generally low, and in many cases negative. The expansion of the public sector—pursued alongside a rapid push for Africanization and with weak capacity of public institutions—forced some expatriate staff to flee the continent, stretching the remaining limited indigenous technical and managerial capacity to a breaking point.

At the same time, some African governments attempted to actively curb private sector initiative, and suppressed the emergency of independent institutions such as cooperatives and grassroots organizations. Furthermore, in most SSA countries the political situation has never been conducive to the growth or sustenance of independent institutional capacity. Most SSA countries have been crisis-ridden, both economically and politically. In most African countries, the post-independence years have witnessed the establishment of one-party states, military coups followed by military dictatorships, constant suppression of the rights of expression, and various forms of political persecution. These undemocratic structures have been a major source of civil wars, secessionary revolts, and border conflicts. The political system has tended to be secretive, mistrustful, and intolerant of dissenting views. As a consequence, there has been a suppression of opposition parties, trade unions, vocal professional associations, informed groups of intellectuals, and opinion-makers. In the circumstances, the

opportunity for open discussion based on objective policy research has been lacking. Censorship tended to confine local analysts to relatively uncontroversial issues, thereby reducing the demand for critical policy analysis and advice, thus leading to the neglect of research and training institutions. In some cases, this frustrating political environment has led to the exodus of African professionals from the SSA region (ESAURP, 1987). Although most of these negative trends were reversed during the 1980s as several SSA countries yielded to pressure for democratic reforms, the legacy of a weak institutional base remains.

Since the late 1970s, the major constraints to capacity building have been the stagnation in enrollments; erosion of quality in education and health services; and the deterioration in physical infrastructure. The quality and coverage of primary education has been falling. Illiteracy rates seem to be rising, and enrollments have fallen from an average annual rate of growth of 8.9% during the 1970s, to 4.2% during the early eighties. Secondary schools are grossly inadequate. In Tanzania, for example, secondary school education is available to a tiny 4% of the population (World Bank, 1994b). Higher education has been particularly hard hit between declining budgets and the rapidly expanding student body.

Indirect evidence on the decline in educational quality is reflected in the shortage of supplies of key educational inputs such as books, and other learning materials; decline in teachers' teaching time; and deteriorating and inadequate physical educational facilities (Fine, 1990; ESAURP, 1987). For instance, the average number of books accessible by one university student has declined from 49 in 1979 to 7 in 1988. As a consequence, Africa's first class universities of the 1960s, like Makerere University of Uganda, the University of Ghana at Legon, the University of Ibadan in Nigeria, and the University of Dar es Salaam in Tanzania, have now fallen into a severe state of disrepair (World Bank, 1991). Due to lack of investment in research, research output has lagged behind the training accomplishments of African universities. The African Academy of Sciences estimates that African countries spend as little as 0.1 percent of GDP on Research and Development (R&D), while developed countries spent twenty times as much (Saint, 1992).

The absence of research funds has frustrated efforts by research institutions to initiate and articulate a home-grown, coherent and focused research agenda. This has led to the emphasis on demand-led consultancy which reflects short-term donor policy concerns, rather than analytical research concerns which in turn are more reflective of institutional priorities (REPOA, 1995). The problem has been compounded by poor pay scales and

remuneration structure, erosion of real wages, and lack of merit pay systems which relate payments to performance and not status. Out of the 27 SSA countries for which some data are available, only one (Seychelles) is reported to have experienced modest increased in real wages in the early to mid-1980s. Declines in real wages have been steepest in Sierra Leone, Somalia, Tanzania, Sudan, the Central African Republic, Zambia and Madagascar, where, for instances, the average rate has dropped by 10% or more every year between 1980–86 (Vandemoortele, 1991).

The SSA's economic crisis of the 1980s, coupled with the explosive population growth which greatly increased the demand for educational and health services, has complicated the problem. Economic decline and structural adjustment programmes (SAPs) have necessitated significant cutbacks in Africa's public spending which dropped from US\$ 10bn in 1980 to US\$ 8.9bn in 1983. Cuts have been made in all areas including maintenance, equipment supplies, training and staff development. For SSA as a whole, expenditure on education as a share of GDP declined from 3.6% between 1981–86 to 3% between 1987–90 (World Bank, 1994a). There is also evidence suggesting that the decline in real wages has been accompanied by a strong compression in the wage structure. Higher income earners (mainly the skilled professionals) appear to have suffered more from falling purchasing power than low income earners, leading to a narrowing in occupational wage differentials. In Ghana, the real wage of a principal secretary dropped by 88% between 1977–85; while that of a messenger fell by 52%. In Tanzania, the ratio of the top bracket civil service average real wage to the minimum wage declined from 17:7 in 1980 to 8:5 in 1990 (Bagachwa and Naho, 1994). It thus became difficult to retain or attract highly trained personnel.

Paradoxically, even the little capacity that exists appears not to have been effectively utilized. A study which surveyed the capacity of the 18 major universities in Eastern and Southern Africa reported that there has been some misallocation and underutilization of trained personnel. About one-quarter of the respondents had been placed in jobs for which they had not been prepared by their training, and therefore did not know exactly what they were supposed to do in their position (ESAURP, 1987).

Another obstacle to capacity building in SSA has been the absence of a research culture. This is reflected in the insignificant amount spent on R&D activities (being less than 0.5% of GDP), but also on the mistrust governments have for researchers who are normally seen a trouble-shooters or spies.

The ultimate upshot of all these unfavourable developments has been the further weakening of the already constrained indigenous capacity. Capacity erosion has taken four forms. Firstly, some of the Africans trained abroad have tended to remain there. Conservative estimates place the number of Africans who were trained in Europe and who remained there at around 70,000 (World Bank, 1989). Secondly, some top African professionals have emigrated to other countries outside the region. Over 10,000 trained Nigerians are reported to be working in the United States (World Bank, 1989). Thirdly, some of those who have opted to remain in their respective countries have either decided to leave public service and join the growing number of new entrepreneurs in the private and informal sectors, or they have tended to devote less time to their official capacities and focused more on other informal sources of income. Lastly, among the academics and researchers at institutions of higher learning, the tendency has been to shift from institutional academic research work to (mostly donor-driven) consultancy and/or research.

2. Lessons From Previous and Existing Capacity Building Efforts

2.1 Lessons From Past Donor Efforts

As mentioned earlier, for more than three decades governments in SSA and the donor community have been working on capacity building in diverse ways. These have included overseas training, technical assistance (TA), and specifically tailored programmes. External aid to African education has not been negligible. In the early 1980s it was estimated to be about \$1.6bn, nearly \$4 on per capita basis. This increased to about \$7 per capita in 1987. Over 97% of this educational aid was provided on concessionary terms. About one-quarter of the total aid was in the form of scholarships for African students to study abroad, while a significant portion (44%) was in the form of technical assistance.

Admittedly, foreign technical assistance and expatriates will continue to fill policy analysis and management gaps in developing countries. But given the high cost of TA to both the recipient countries and donors, there will be no certainty for their continuity in the longer term. In 1988 for example, the cost of maintaining 100 TA personnel who worked in Tanzania was about twice the budget of the entire civil service (Jolly, 1989).

Furthermore, the effectiveness of TA in building human and institutional capacities in developing countries is increasingly being questioned. It has

become increasingly evident that TA programmes have not been able to build enough local skills and develop lasting indigenous capacities. TA programmes have also failed to transfer appropriate technologies from the North to the South, and are *ad hoc* and uncoordinated in their approach. The most cited reasons (see, for example, Forss *et al*, (1988); Bagachwa *et al*, (1985); World Bank (1987; 1991:12–13) for the ineffectiveness and unsustainability of technical assistance are as follows:

- TA is often perceived as supply (donor) driven or imposed as a price for financial assistance rather than a response to local demands.
- Projects are overdesigned, reflecting an imperfect understanding of local institutional and cultural environment. There is often little attempt to ensure local input and adoption.
- TA is usually uncoordinated and sometimes duplicative, resulting in waste of resources and an overstretched capacity of aid recipients.
- The skills transfer objective built in some of the TA programmes has not been realized partly because some TA personnel lack capacity or are uninterested in performing the training function, or simply because the counterpart system does not work (due, for example, to poor incentives and huge differences in remuneration).
- In a number of cases, TA has had a negative impact on indigenous institutional development either by creating oversized vertical organizations that are not sustainable without foreign assistance, or by undermining the capacity of core ministries by setting up their own project management units.
- Overseas training has also been ineffective. First, the low pay structures in African countries have often led to talented Africans remaining abroad. Secondly, initiatives have not been made to ensure that the overseas universities or institutions selected for fellowships have programs relevant to the needs of SSA participants. The knowledge gained is sometimes inappropriate to the practical problems they face as practitioners.
- Finally TA has tended to be short-term, based on project by project approach, which make it difficult to coordinate programmes and to achieve economies of scale.

It would be misleading however, to conclude that all past capacity building efforts have been a total failure. Certainly there has been some success stories. During the sixties and seventies, Ford and Rockefeller Foundations contributed heavily to building capacity in Africa. They assisted in the financing of training, conducting of research, and establishment of teaching department and research institutions. For example, Rockefeller Foundation invested \$7.1m in institution building grants to the universities of Makerere, Nairobi and Dar es Salaam between 1961–73. African institutions which remain today as important centres of research—for example the Institute of Development Studies at Nairobi, and the Economics Research Bureau at Dar es Salaam—were first launched by grants from Rockefeller's University of Development Program. Although these efforts have been much reduced recently, many trained persons now occupy important posts, and more of the institutional legacy remains.

According to a review by the World Bank, four major elements were crucial to the success of the Rockefeller programme:

- (a) Focus and concentration on five selected African universities (Makerere, Uganda; Dar es Salaam, Tanzania; Nairobi, Kenya; Ibadan, Nigeria; and the National University of Zaire), and as such resources were focused and not spread thinly.
- (b) Emphasis on long-term indigenous staff development.
- (c) Appointment of short-term visiting professors and researchers from abroad to strengthen local teaching and research skills.
- (d) Support for research which was grounded in the recipient countries' real world problems (World Bank, 1991).

From the foregoing, four important lessons from past donor efforts to build capacity can be drawn. Firstly, capacity building efforts must have a long-term horizon if they are to succeed. Secondly, TA can only serve as a stop-gap measure which cannot provide a lasting solution to the problem of low absorptive capacity. There, is therefore, no substitute for SSA having its own indigenous capacity. Thirdly, there is a need of strengthening African ownership of, and participation in, and the design and implementation of capacity building programs. African researchers and governments should indeed play a lead role in the initiation, design and implementation of the programs bearing in mind the nationally determined priorities and

circumstances. In order to play this role effectively, African governments must provide a policy environment that is conducive to the creation of competent local policy analytic and management capacities, and conscious efforts should be taken to strengthen local institutions that provide these capacities. Lastly, success will also depend on the programs' ability to achieve cost savings, higher quality results, greater impact, and sustainability.

2.2 Lessons from Recent Initiatives

Despite some disappointing experiences, bilateral and multilateral donors, as well as private foundations and national governments, continue to explore ways of building capacity more effectively. Some recent initiatives have attempted to address deficiencies in past programmes so as to draw lessons from the insights derived from the experience of best practices. Such capacity building initiatives are many, but four of these deserve special mention.

The UNDP, for example, has initiated a *Special Action Program for Administration and Management (SAPAM)* which funds Structural Adjustment Advisory Teams to assist governments in preparing adjustment programs. It also provides funds for the establishment of a specialized development management program which will assist in addressing economic management problems that arise from the implementation of SAPs.

Another significant initiative and a potentially successful capacity building research network is the African Economic Research Consortium (AERC). The AERC was established in 1988, and was initially supported by the International Development Research Centre (IDRC), the World Bank, the Ford and Rockefeller Foundations, and the US Agency for International Development (USAID). Its primary objective is to fund research proposals on African economic issues by Africans working in Africa. The AERC is emerging as one of the most effective capacity building programmes in SSA. Its success is mainly attributed to the following factors:

- (a) A focus on a international trade and balance of payments managements.
- (b) A flexible approach that allows programs to be tailored to the needs and capacities of individual groups of researchers which accommodates different institutional and national circumstances within a regionally defined research agenda.

- (c) A team approach to research, with researchers cooperating in workshops, training and publications.
- (d) A review procedure for research proposals featuring peer group discussion and assessment by informed resource persons from within and outside the region.
- (e) Periodic meetings of the network (at least twice a year) to ensure interaction among the teams and to allow African researchers to remain in contact with colleagues across Africa and overseas, thus helping them to stay at the frontier of their profession continuously deepening their professional knowledge.
- (f) A program management structure that stresses local determination of the research agenda, while still retaining accountability to the sponsoring members.

Another noteworthy initiative is the UNDP/EDI/ILO Program (UNEDIL). This is supported by a consortium of donor agencies including UNDP, EDI, ILO, USAID, CIDA, SIDA, Commonwealth Secretariat, and the Government of Netherlands. The purpose of the UNEDIL is to build capacity for self-reliance among 16 of Africa's leading regional and national management training institutions (MDIs) through a process of collective action. The MDIs themselves take the lead in determining the priorities and the agenda for action; designing the programs and modalities, and implementing the action plans.

In all these programmes, the underlying assumption—and perhaps the programmes' strongest attribute—is the belief in the importance of building indigenous competence that is already there by bringing together the strongest resource persons, and strengthening the strongest institutions so that in turn they can multiply the benefits and take leadership in capacity building.

The early 1990s has also seen the birth of two other potentially important capacity building initiatives: the African Capacity Building Initiative (ACBI) and the Netherlands supported Research Programmes for Development (DGIS-RPD). The major objective of the ACBI, which is sponsored by the African Development Bank (ADB), the UNDP, and the World Bank, is to build over the long-term African capacity in policy analysis and economic management, and to ensure more effective utilization of the already trained African analysts and managers. Other objectives include the establishment of mechanisms for coordinating various capacity building efforts that would lead

to greater efficiency and effectiveness of on-going donor efforts; and the rehabilitation or strengthening of institutions—including consulting firms and other professional associations—that are involved in economic policy analysis and economic management.

At the moment the DGIS-funded research program covers three countries in SSA (Mali, Tanzania and Uganda), and six other countries outside Africa including Bangladesh, Bolivia, India, Nicaragua, and Vietnam. Both the ACBI and the DGIS Research Programmes for Development share four important characteristics which have potential in enhancing the effectiveness of these programs. Firstly, they assume a long-term horizon. Secondly, they are demand-based, driven by the needs and priorities of recipient institutions in recipient countries. Thirdly, they emphasize the need to promote research directed at development issues, and which could be genuinely utilized by the relevant policy makers within and outside the recipient countries. Lastly, they recognize the need for a strong African involvement in the planning and formulation of capacity building strategies.

It is too early to comment on the potential effectiveness of these programmes, but at least they represent an improvement over the past donor efforts to build capacity, and therefore need all the encouragement possible.

2.3 Some Lessons from Asia and Latin America

A review of capacity building experience for policy analysis and economic management in Asia and Latin America shows that some two decades ago the many problems familiar to SSA were prevalent as well. In Latin America and some Asian countries like Indonesia, political instability and weak bureaucracies were dominant during the 1950s and 1960s. University educational standards in these countries were also considered to be extremely low. For example, Indonesia had hardly any university graduate at the time of independence in 1948. South Korea had only six Western trained PhDs in economics in 1969. In fact, some of the African universities were quite ahead of institutions in Asia and Latin America in the sixties. As in SSA, demand for policy analysis was low, and competent and independent policy research centres were rare in Asia and Latin America.

Through time, indigenous institutions in Asia have acquired capabilities which have enabled them to play an important distinguished role in policy formulation, and thus complementing the inhouse capabilities of their respective governments. Good examples of such institution are the College of Public Administration of the University of Philippines; the Korean

Development Institute (KDI), the Instituto Nacional de Administracion Publica of Mexico, and the Grameen Bank of Bangladesh which has innovated a special effective lending programme among the poor. Important factors contributing to the success of Asian and Latin American institutions have included:

- (a) A favorable environment that can attract and retain well-trained professionals.
- (b) Long-term twinning arrangements between indigenous governments in form of favorable macro-policy environment, provision of necessary infrastructure, strengthening of indigenous technological capabilities, and a strong commitment to place investment in human capital and institutions high on the agenda (Ernst and O'Connor, 1989).

3. Conclusion: Implications of Capacity Building for DGIS-Funded Research Programmes

3.1 Research Programmes as Means for Building Capacity

Development depends on the capacity of a society to analyse, adapt, initiate and manage change. Effective policy analysis and economic management are therefore necessary for successful development. This implies however, that for effective policy analysis to take place, capacities must be built. In addition, there must be good quality and consistent data which is easily accessible to the policy analysts. One way of building capacities and generating such information is through research. To the extent that research is capable for generating the required information, it helps to enhance capacity and to provide the means for appropriate knowledge. Research is thus a necessary condition for empowerment. In addition, research can contribute to better understanding of the desirability of certain policies and their implication and improved ways of solving problems (Netherlands Government, 1984).

The recently launched DGIS-supported multi-year and multi-disciplinary research programmes will not only serve as an instruments for development cooperation, but will also play an important role in building capacities and generating information required for policy analysis in recipient institutions and countries. In this regard the preceding analysis provides some useful insights that could be selectively used to enhance the effectiveness of the DGIS-funded research programs, especially on issues related to the research focus, scope, networking, stimulation of demand for capacity analysis, and targeting the beneficiaries.

3.2 Research Focus

While the need for building additional research capacity and/or strengthening existing capacity is justifiable, such an initiative should be carefully worked out. Resources, whether from donors or national governments, will always be limited. As the cases of Eastern and Western African Technology Policy Studies Networks have shown, if resources are spread thinly over a range of research topics, the impact may not be of any quantitative significance (Herbert-Copley, 1992). It might be instructive therefore to direct research efforts and resources to a specified research area or limited number of themes. These include realization of scale of economies through concentration of efforts; greater possibility of evolving a common and workable research methodology; generation of a critical mass of research results from which broader and much firmer conclusions can be drawn; greater project visibility, and lower unit costs in training and peer review.

In order to ensure ownership and full participation of the recipient institutions in the design and implementation of research programs, the selection of the research area of focus should be entrusted with the recipient institutions. When searching for the relevant theme, local institutions should take into consideration the relevance of the theme both nationally and globally, and its practical relevance within the national socio-political context. Moreover, a broad-based consensus over the selected theme(s) should be sought through a process of discussion and consultations among potential researchers and users. Research workshops have provided such a mechanism.

3.3 Scope and Activity Coverage

When designing a research program it is important to realize that the term research activity is broad, and should not be confined to simply the collection and subsequent analysis of data. A much broader conceptualization of research would include three interrelated activities: field research, training, and dissemination of research results.

Support for actual field research may take two forms: small, and large grants. Generally, small grants tend to attract junior researchers, are characterized by rapid turnover of participants, and hence tend to be an effective means of supporting research and building research capacity (Herbert-Copley, 1992). However, small grants are administratively expensive, and have little visibility or presence at the national or regional levels. They also tend to attract less of the more experienced researchers.

Large grants attract relatively senior researchers, are more visible, but tend to result in low turnover of participants. The actual amount of funds allocated between small and large grants will therefore depend on whether one intends to maximize capacity building or visibility, and the actual demand, i.e., the type and quality of researchers available.

Training is an essential element in capacity and competence building, and should be accorded an important profile in DGIS research programs. Research skills can be built in several ways. These may include a range of training activities such as short courses, guest lectures, annual meetings, short-term courses in research methodology, etc. Accessibility to literature has also to be considered as an important training aspect, and researchers should be encouraged to include the cost of literature in the research proposals.

As detailed out in REPOA Secretariat and Brian Cooksey (1994), emphasis should not only be placed on capacity building, but also (and equally important), capacity utilization. Although there are many competent researchers, they do not all realize their full potential. Capacity can be built through transfer of skills. Young researchers may be exposed to actual research conditions by being involved in a team headed by an experienced researcher. Proposals can then be expected to contain the names of both senior and more junior researchers. However, the practice of exploiting junior members of staff by giving them substantial pieces of research to undertake on a very small budget is incompatible with good research.

Institutional twinning or collaboration can also help build capacity. To date, the typical relationship has been between universities counterparts. Such relationships have often included a training component (post-graduate degrees in the North), and the mobilisation of funds to undertake collaborative research, usually with a Northern team-leader or partner. This kind of collaboration has generally been more successful in generating quality research and publications than the alternative of funding local researchers through government channels. At the same time, there are examples of institutional collaboration yielding rather mediocre results in relation to the resources committed to the task. This under-performance also includes institutions enjoying long-term support arrangements. Great care needs to be exercised when identifying the partner institutions.

Another form of capacity building would be for the programmes to commission state of the art reviews to clarify further their research priorities. Other supportive activities could include preparation of an inventory of

individual researchers and institutions relevant to the research area; commissioning a series of general and/or annotated bibliographies; establishing a small documentation unit and a computer data base relevant to the research area.

3.4 Networking

Research networks are increasingly becoming important forms of capacity building. Under conditions of widespread deterioration in institutional capacities and infrastructure, networks can be seen as a viable strategy for fostering research output. The advantage of organizing a research programme as a network are that the network would help:

- (a) Serve as a surrogate institution for network members by providing them with access to literature, peer review, quality control, and publications outlets. By so doing, it would facilitate collegiate interaction, and broaden members' local and international contacts, thereby acting as a knowledge broker. These are vital research infrastructures which an individual researcher's home institution should provide, but often fails to do so given the poor state of the research environment in a country.
- (b) Facilitate comparative research through integrated or team research efforts that are capable of generating data on a wider scale from a diverse set of circumstances. This makes it possible to address key issues that might be omitted or taken for granted in a single research effort. In so doing it helps to create a critical mass of research results from which broader and much firmer conclusion can be drawn.
- (c) Enhance realization of scale of economies by undertaking several studies on a common or related research theme, resulting in lower unit costs especially in training and investment in literature. Collective efficiency is thus maximized.
- (d) Foster specialization by permitting some members to focus on one type of research activity and transferring the results to other studies, thereby avoiding duplication of research efforts.
- (e) Increase the chances of making methodological innovations by broadening the base of experience in both problems and experimental solutions.

- (f) Serve as a seed-bed for an exchange of research ideas.
- (g) Facilitate transfer of knowledge and skills from senior to junior researchers, and from researchers of one discipline to those in other disciplines.

3.5 Dissemination

One of the most important determinants of sustainable capacity building in research is the domestic demand for research output. Indeed, it is important even at the design stage of a particular research project to identify who, the beneficiaries of the research output. If, for example, the research output is to be used in policy analysis, would there be demand for such an output? Would government's attitude be hostile to such research findings? The point to emphasize is that it is not always safe to simply assume that demand for independent research output automatically exists. Some governments may have lost faith in research-based policy analysis due to various reasons: poor quality, ignorance, ideological motivation, excessively theoretical, irrelevant to the country's economic and political environment, or simply because researchers have traditionally been anti-government. It should be emphasized, however, that demand for research output is not confined to government departments, but may also stem from private sector institutions. Demand may even come from foreign institutions.

In any case, deliberate efforts must be made to stimulate the latent demand for research output. Sponsoring regular conferences, workshops, and public (including televised) debates will help sensitize and publicize the research findings. These serve three other important functions: as a means of exchanging knowledge, transference of skills, and disseminating research results. A related important form of disseminating research results would be through easily accessible forms of publications. It is crucial to involve, from the outset, policy makers in the design and formulation of the research programs, and in the management of the programs, for example, as members of the steering committees, etc. They should also be encouraged to participate in actual research.

3.5 Conclusion

In conclusion, effective policy analysis must be founded on technical competence, and the availability of good quality and consistent data. Effective

research programmes can help build these capacities. To be successful and sustainable, research programmes require a long-term horizon. Success will also depend on the existence of effective institutions and a committed system of good governance which, among other things, places investment in human capital and institutions high on the agenda. The effectiveness of research programs in building capacity will also be facilitated by commitment of donors to provide the vital resources without conditionalities that would highjack the recipients' ownership of the programs. The recipients must provide a lead in the design and determination of research priorities. They must own the programs. In the meantime, expatriate advisors would continue to provide stop-gap measures to alleviate capacity problems in SSA. However, there is no substitute for SSA having its own indigenous capacity.

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