

Evaluation of the African Technology Policy Studies Network.
Final Report

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Preface

In April 1996, the International Development Research Centre (IDRC) (Nairobi Regional Office), appointed Professors Daniel Chudnovsky and Lydia Makhubu to conduct a review and evaluation of the work of the African Technology Policy Studies Network during its first two years of operation (1994 - 96), taking into account its historical evolution from two earlier networks, the Eastern and Southern African Policy Studies Network (EATPS) and the Western African Technology Policy Studies Network (WATPS). The IDRC provided the evaluators with specific terms of reference which are attached in Annex I.

The evaluators met once in Nairobi in April and were provided with background information by the Network coordinator and with extensive documentation which included samples of research proposals, working and discussion papers by the Coordinator. They held discussions with the Chairman of the ATPS Steering Committee and with the Director of IDRC - EARO. They then travelled to the different countries to meet with the researchers and government officials (listed in Annex II).

The first section of the report introduces the purpose of the evaluation and reviews the work of the ATPS in research, dissemination, training and linkages to policy makers and research end users and comments on aspects of the structure of governance of ATPS. The final section provides observations and recommendations regarding the future of the Network.

The evaluators wish to express their gratitude to the Coordinator of the ATPS, the Donor representations, the researchers and government officials for the frank expression of their opinions and for providing information on the work of the ATPS.

Executive Summary

Evaluation of the African Technology Policy Studies (ATPS) Network.

The evaluation of the work of the ATPS Network during its two years of existence focussed on research, the extent to which a regional research community has been established, the networks expansion and interdisciplinary nature, dissemination activities and their impact on policymakers as well as their effectiveness as vehicle for information exchange and capacity building and general management and future direction of the Network.

Research

(a) Guidelines and Procedures for evaluating research proposals.

Following a review of the guidelines and procedures for evaluating research proposals and a thorough examination of some of the funded proposals, the evaluators observed that while the guidelines are well designed many individuals research proposals were of uneven quality lacking basic knowledge and research skills. The Coordinator has played a positive and critical role in assisting researchers to refine their proposals but the evaluators are of the view that his role could be enhanced by strengthening the focal points and engaging assistance to ease his load.

The assessment of research proposal by the Steering Committee deserves serious attention and some policy change may be necessary to ensure efficient assessment.

(b) Execution and quality of small research proposals.

An examination of the small research proposals shows that the projects are evenly distributed into three main ATPS themes which are Economic Reform and Technology, Technology issues for Small and Medium Enterprises and Consequences of Technological Change. The gender distribution of the projects is reasonable but the poor participation of countries other than Nigeria is striking. The strong participation has been attributed to the large numbers of senior researchers in that country compared to other African countries. The evaluators also observed lack of inter - institutional collaboration but the situation is being addressed by ATPS through promoting large network project to foster inter-country collaboration and as well as cluster projects to link different researchers who are interested in similar projects in different countries.

On report writing, the evaluators are of the view that more time should be allocated to the production of the final report in order to improve quality of the reports and increase chances of their transformation to publishable papers.

Annual Workshop, National focal Points and Dissemination Workshops, Policy Impact and Publications.

The content and organization of both annual workshops have generally been well regarded by the participants. Some suggestions for further improvement have been made.

Dissemination workshops are considered very important by all researchers. The Nigerian Network has held a highly successful event which attracted policy-makers, the private sector, prospective researchers and received wide media coverage. This confirmed the importance of dissemination work for creating linkages with policymakers, making impact of policy and expanding the network.

National focal points are considered by researchers to be critical to the success of the network, and therefore a judicious selection of these lead researchers is stressed by all participants. Some suggestions for improving their role are made.

While the publication record of the ATPS has been weak so far, there are suggestions that perhaps expectations were too high for a two year old organization to have published more that it has done.

The Structure of Governance and Administration

Compared to the previous networks that were directed by IDRC, with part-time regional coordinators and national committees, ATPS has a centralized structure consisting of a Steering Committee, a full time Coordinator and a National Focal Point in each participating country.

During the short life of the ATPS, the Coordinator has done an excellent job. The evaluators have been impressed by his commitment and knowledge of the subject. The tension observed by the evaluators between the IDRC and the Coordinator over administrative matters is cause for concern. However, the restructuring being undertaken by the Steering Committee should address the situation and pave way for the smooth running of the Network in future.

Conclusion

The evaluators believe that mission of the ATPS is extremely important for development in sub-Sahara Africa. The evaluators wish to express their satisfaction with the progress made during the past two years in fulfilling of the mission of ATPS.

Introduction

The mission of the African Technology Policy Studies network (ATPS), as stated by its founders, is to improve the quality of technology policy-making in sub-Saharan Africa and to strengthen the regions institutional capacity for the management of technological development. This is achieved through research, dissemination, training and linkages to policy makers and research end users.

The main activities that have been envisaged for achieving the ATPS objectives are: research; publications, annual workshops; national level dissemination and linkage seminars. Bearing in mind the terms of reference of the evaluation, the activities carried out in 1994, 1995 and until July 1996 are assessed below. The effectiveness of ATPS modes and structures of governance and administration is also examined, especially in the light of the discussion of the 5th Steering Committee meeting in which the lead evaluator participated as observer.

Research

a) On the Guidelines and Procedures for evaluating research proposals

The Guidelines for the Presentation of Research Proposals to ATPS distributed in April 1994 and the ATPS Research Proposal Review Process are well designed and clearly stated. Besides the normal guidelines on research problem, objectives and methods, in the expected results and impact the links with research users and impact on policy making are well emphasized.

The positive role played by the Coordinator in commenting on the initial proposals and in assisting researchers in the reformulation of the proposals has been acknowledged by all the researchers interviewed by the evaluators. The bibliographical assistance from the Coordinator has also been acknowledged. There was however a suggestion from some researchers that a national meeting convened by the Focal Point to discuss all initial proposals prior to their submission would improve their quality. This was suggested should be written into the Guidelines and Procedures.

The peer review mechanism applied in the Annual Workshops has also been considered useful for all researchers, although the lead consultant was surprised by the fact that peer review is not done in a written form and in an anonymous way. In acknowledging the role played by the Coordinator some researchers felt that it would ease his workload and further enhance the review process if external reviewers were engaged to assist the Coordinator. However, some researchers pointed out that the discussion was some times superficial and not very objective.

Regarding the funding decision at the final stage by the Steering Committee, and the classification of proposals into three categories ie. fundable without major revision, fundable with major corrections and not fundable, it would be more appropriate not to fund those proposals that needed major revisions. They would have to be resubmitted once the corrections had been made and at that stage evaluated and funded if acceptable.

The effectiveness of the Steering Committee in assessing the proposals is an important issue. In the 5th Steering Committee meeting held in Nairobi in April 1996, which the lead evaluator was privileged to attend, some members admitted having not read the proposals and yet, they had to evaluate the proposals and decide on their fundability. This is a major constraint to the review process and is due to a large measure to the fact that members of the Steering Committee are busy people and come from diverse discipline. In view of this problem, resource persons were used in mid 1995 to assess the projects for the October 1995 meeting. This important issue will be taken up in the recommendations.

b) On the execution and quality of the small research proposals.

Regarding the many submitted proposals, the ATPS Annual Report 1994 made a clear statement in this connection: "The quality of individual research proposals was adjudged generally weak due to lack of basic knowledge and research skills; vagueness on the policy relevance of their research; and lack of grasp of current literature in the area of research". This is of course a serious problem that reflects the lack of experience in the subject, despite the important training efforts made in the previous technology networks, the different background of the researchers and the low attention that technology policy issues has received in the African policy making.

Within its narrow scope and resources, ATPS has tried to redress some of these problems through the active role played by the Coordinator in coaching some researchers in countries that submitted very few or no proposals to ATPS. However, it is obvious that this in area where far more training and dissemination activities at national level are needed. Some researchers have suggested the evolution of deliberate policy to require national discussion of research proposals as well as cross-country meeting to bring young and experienced researchers together. This would serve not only as a training forum to develop researchers but also as a means of strengthening regional cooperation within the Network.

In view of this situation to assess the overall quality of the research funded by ATPS, attention was paid to the twenty eight funded research proposals in 1994-95 including five draft final technical reports submitted to ATPS in 1996.

It is useful to have four main themes on which ATPS will concentrate its activities but they are still too wide as to generate a critical mass of projects in one priority area.

Although the 28 small research projects are evenly distributed into three main ATPS themes (i.e. Economic Reform and Technology and Technology issues for SMEs and Consequences of Technological Change), their titles show the variety of topics that are covered. Whereas the gender distribution of the 28 projects is reasonable (32% are carried out by female researchers), the poor participation of countries other than Nigeria (and to a lower extent Kenya) is striking.

It is also striking that, although in many proposals several researchers are involved, in very few of them researchers working in different types of institutions (eg. universities, technology institutes, government offices, private firms, etc) are involved. The sort of research networks that ATPS is supposed to encourage is not yet being created.

This situation has been acknowledged by ATPS and some efforts to redress this situation are being made. In this connection, not only a large network project has been prepared (see below) but also an ambitious line of action has been decided in the 5th Steering Committee meeting: to foster a number of cluster projects, by linking existing researchers interested in similar topics in different countries. (eg. industrial clusters, new and emerging technologies, low cost buildings). Some researchers have suggested the inclusion of topics such as biotechnology and bioengineering as areas that would encourage teamwork across discipline and across institutions.

Eight of the twenty two research projects not yet finished have been reviewed and it is possible to make the following comments on them.

The proposal on "The technological and socio-economic impact of Nigeria's industrial pollution control standards" by Olokesusi *et al* addresses a very important subject and reflects a good knowledge of the relevant literature. However, the objectives of the study are just too ambitious, the research questions are too general and the research hypothesis do not follow from the received literature (instead of no significant differences, in fact significant differences can be expected in each of them). Furthermore, it would be surprising that the detailed data from the 40 industries to be surveyed are in fact compiled by the firms and/or made available to the research team.

The proposal on "Technological capability in the Nigerian leather tanning industry" by Ezenwe *et al* is a straightforward study on a traditional sector. However, given the fact that Nigerian leather tanning does not go beyond the crust stage and that environmental concerns have not yet reached this branch, it is doubtful that significant technological capabilities have been accumulated in this sector.

The case study of the fertilizer plant in Nigeria by Laditan & Alli attempts to shed light on the various factors that have contributed to the poor performance of the first fertilizer company in the country. The research problem and hypothesis are clearly stated. Hence no major difficulties can be envisaged in achieving the expected results.

The project on "Technologies developed/used in the creation of enterprises with minimal resources" by Ngahu is a good proposal. The research objectives and methodology are clearly defined and the links with the research users are well designed. It is worth

mentioning in that connection that, in an interview with the lead consultant, the researcher acknowledged the experience gained in her first project carried out in 1991 and supported by the EATPS and in publishing a short paper summarizing the main results of that project in the book edited by Ogvu, Oyeyinka and Mlawa Technology Policy and Practice in Africa. In the same interview, the researcher indicated that she could not meet the original project timetable and suggested that more time should be given in the projects to be able to submit both the interim and the final reports.

The proposal on "Development of science and technology in Kenya during periods of structural adjustment" by Mwamazingo and Ndungu is also a good one. The research problem and methodology are well stated and the results should be an useful contribution to the science and technology policy making in Kenya. Two questions are however missing in the proposal. First, it would be useful to relate the study findings to the growing literature on the National Systems of Innovation (i.e. the recent books edited by Lundvall and Nelson, respectively). Second, no discussion of research findings with policy makers is envisaged in the proposal. Furthermore, in the research timetable too little time was allocated to the writing of the final draft. It is then not surprising that the submission of the final draft has been delayed.

"An investigation into factors that influence the diffusion and adoption of inventions and innovations from Research Institutes and Universities" in Kenya by Bwisa and Gacuchi is not only a promising proposal on an important issue but also an example of networking fostered by ATPS (each researcher submitted a separate proposal and in the Annual Workshop ATPS suggested a joint project in which the two principal researchers are a university professor and a senior government official).

The proposal on "Economic policy reform and agricultural technology in Ghana, 1983-94" by Fosu attempts to shed light on a number of relevant questions by using time series econometric models. This is a useful research methodology if complemented by a qualitative discussion of the findings in the light of the research objectives.

A different research methodology will be applied in the proposal on "The case of Maize Yield Technologies in Kenya" submitted by Kabiecon Food Security Policy Consultants and the Central Bureau of Statistics. This is an ambitious but carefully design project that attempts to shed light on a very relevant issue for agricultural technology policy.

It is apparent that most of the funded research proposals are concentrated on relevant issues, they are well designed, reflect a good knowledge of the literature and of the subject to be investigated. Hence their overall quality is considered good.

However, of the twelve projects that have to be delivered in January-March 1996, half of them have been completed. Two of them on time and even before time and the other four with some reasonable delays.

One of the critical problems in the funded projects is the little time generally assigned to the writing up of the draft report. Some of the researchers interviewed by the evaluators have suggested that either ATPS should give more time or to provide more money in the

budget for the remuneration of the senior researcher. Regarding this last point, other researchers considered that the honorarium should not be paid at the end but also in installments during the execution of the project.

Given the low salaries that senior researchers generally receive in the institutions where they are employed, some consideration should be given in the projects budget to increase the honorarium for the principal researcher or at least to pay it during the project and not at the end.

With respect to the finished research projects, the draft final reports it is possible to make some general comments on each of them and attempt an overall assessment.

The study entitled "Electric Power Utilities and Technological Capacity-Building in Sub Saharan Africa. The Case of Volta River Authority, Ghana" by A. Brew-Hammond provides a detailed account of the process of technological accumulation in this successful undertaking. Interesting information on the power sector in Ghana and some comparative data on other electric power projects in Kenya, South Africa, Brazil and South Korea are also provided in the study.

While the study succeeds in demonstrating the crucial role played by training activities in the process of technological accumulation in VRA, it has several shortcomings. First, the conceptual framework suggested in ch.2 is hardly used in the rest of the paper and especially in ch. 5 and 6. Second, no attempt is made to take issue with the World Bank EPUES conclusions in the light of the case study findings. Third, the role played by foreign consultants should deserve a more careful and detailed discussion than that offered in pp.133-34. Finally, it is striking that this lengthy study has no concluding chapter and hence no lessons are drawn from this unusual experience for other less successful cases. Far more work is needed to transform this interesting but generally descriptive report into an analytical piece in which some key issues in the received literature are discussed in the light of the evidence collected in this case study.

The findings from detailed case studies of nine firms located in Nnewi are by far the most interesting contribution of the report on "Technology firm size and institutional support: Private small and medium engineering firms in Nigeria" by Banji Oyelaran-Oyeyinka. However, the learning path of these dynamic Nigerian firms relying mostly on Taiwanese technology, although well depicted in a few fascinating pages, is unfortunately not developed in terms of technology policy and almost lost in a lengthy and not clearly focused study.

In addition to this crucial weakness, the report has several problems. First, except some observations on the role of financial institutions (in section 4.3), no attempt is made to examine the effectiveness and impact of the institutions listed in Table 3.16, as stated in the research objectives. Second, the conceptual framework should be used to elaborate on the research findings and not simply as a background. Furthermore, sections 4.1 and 4.2 should be integrated into the conceptual framework. Third, the tedious description of the structure and performance of industry in Nigeria should be replaced by a short section indicating the main features and trends that are relevant to the specific objectives of the

study. Finally, the results of the survey to the 47 active firms should be elaborated by main issues (in connection with the findings fascinating case studies) and not simply described. This elaboration should be the core section of the report. Once this is made, it may be expected that the conclusions of the study should look more attractive than the present shaky ones and be more useful to research users.

"Technological dynamism and export performance: A study of Nigeria's textile industry" is an interesting report, well supported on the relevant received literature. Its main contribution is a detailed analysis of the dynamics of the capabilities accumulated by ten textile manufacturers and a comparison with their counterparts in Asian developing economies. On that basis, a number of sensible policy recommendations are made at the end of the report.

The report should be more valuable if some points are clarified and the core section (in pp. 18-40) is rewritten. First, it is not clear how representative are the ten chosen firms of the Nigerian textile industry. Unless the firms are highly representative the subtitle of the report is misleading. Second, from Table 4 it seems that exports are a marginal activity for all exporting firms except one. As no attempt is made to jointly analyze tables 2 and 4 it is difficult to understand the internal and external factors accounting for the poor export performance. Third, more information on the nature of competition and the share of the surveyed firms in the domestic market should be given to understand the dynamics of internal market competition. Finally, the information provided in pp. 18-40 should be used to illustrate the main issues arising from the received literature in this case study and not simply to provide one set of data after the other. In that connection, the four factors that are identified in p. 40 are just too general to explain the differences among the surveyed firms.

The report on "Policy-induced local sourcing of raw materials and technology development in Nigerian industry" by Kayode *et al* addresses an important issue, reflects a good knowledge of the literature and proposes an interesting conceptual framework. However, since the findings of the empirical analysis in chapter V are far weaker and inconclusive than what can be expected from the discussion in the previous chapters, the report seems too pretentious. Furthermore, it is not clear from the report why machine fabricating equipment were not surveyed as indicated in the original proposal and to what extent the interviews with RMRDC and other government offices were useful for the empirical analysis. In the light of the findings not only more substantive conclusions can be derived and implications for other manufacturing sectors should be suggested. The contents of chapters I to IV should be revised in view of the actual findings of chapter V. Furthermore, in the title Nigerian industry should be replaced by Nigerian brewery industry.

The report on "Issues in yam miniset technology transfer to farmers in Southeastern Nigeria" by Madukwe *et al* not only provides an interesting account of the research findings of this well designed and executed project. It also contains a number of sensible policy recommendations.

The overall quality of the draft final reports is not very high. While in most reports the drafting should be clearly improved to convey a convincing message of the main findings and their policy impact, in some of them the lack of focus, the descriptive character of the results and of weak if any relationship with research users is apparent. It should be noticed that some reports rely on the received literature in a useful way to discuss the main research issues. However, in other reports there is a tendency of including several times the same authors (eg. Ernst et al) without any obvious purpose.

Besides allocating more time in the projects time table for writing the reports, to improve the quality standards of the funded projects and especially to transform them into publishable papers, ATPS should make a great effort in assisting the researchers with guidelines and training in that crucial step of the research process. It has been suggested by some researchers that perhaps the Coordinator should be given assistants to do the groundwork and to assist him accomplish this step.

c) The network research proposal

In addition to funding small research grants, a network research proposal entitled Technological capabilities in Sub-Saharan Africa in the context of a changing policy environment has been prepared by ATPS. Six countries (Ghana, Kenya, Nigeria, Tanzania, Uganda and Zimbabwe) are going to be covered with a similar methodology in two broad manufacturing sectors (food processing and metal working). Significant preparatory work preceded the proposal dated 30th September 1995 on which the comments are concentrated. The ATPS working paper No.1 by Adeboye, Bagachwa and Bamiro published in May 1995 has also been taken into account in the assessment. Furthermore, the experience gained by the lead consultant in directing an IDRC funded similar project in Latin America covering Argentina, Brazil and Mexico and two sectors (machine tools and petrochemicals) is obviously reflected in the comments.

This is a major initiative that attempts to shed light on an extremely relevant topic for Africa and for most developing countries. This is precisely the type of project that ATPS needs to be able to substantially increase its visibility and to really begin to influence key agents in the economic policy making process. The results of such a project will begin to bridge the gap not only between technology policy researchers and users but also between micro and macroeconomists and between scientists and engineers and economists and other social scientists.

The proposal is quite good in defining a conceptual framework for analyzing technological capabilities at firm level and in summarizing the key macroeconomic effects of policy reforms. However, too many issues are dealt with in pp. 2-7 without ranking those more relevant to the research hypothesis. At the same time, in contrast with section 1.4 of the ATPS working paper No.1 containing a very clear assessment of the macro economic impact of the policy reforms, the proposal is too cautious regarding the overall technology impact of SAP reforms. If the World Bank concedes that performance in the manufacturing sector is dismal (with the exception of Mauritius) and a recent paper on

Structural Adjustment and African Industry by S. Lall (published in the December 1995 issue of World Development) reaches the same conclusion, the proposal should take these findings into account in the research design and methodology.

In this connection, the research hypothesis and methodology are worthwhile although they have some problems that should be clarified before starting the project:

1) it is surprising that a comparative piece elaborating the main findings of the country studies is not envisaged within this two years project. This is a key output of the project and an indispensable component for any publication or dissemination work. At least six months should be devoted to such a crucial task by a small team of senior researchers. The comparative work may be initiated when the first drafts of the country studies are ready and a draft of the comparative piece should be discussed in all dissemination seminars.

2) it would be advisable to have three or four instead of six countries to be able to better manage the project and facilitate the comparative work. Furthermore, too many specific activities are targeted within the two broad sectors. For the purposes of the comparative work, it is important to have the same activities in all the countries to be studied.

3) too much time is allocated in each country study to the survey work and too little time is assigned to the detail case studies. With an adequate sampling procedure, it is not necessary to survey 150 firms in each country. Perhaps with half of them a good picture of both sectors can be obtained.

While the survey work is useful to detect the main trends of the problems under examination, it is only in the detail case studies that information and insights on the long and complex process of learning to learn can actually be gained. Such case studies have to be carried out by senior researchers with the co-operation of the management of the firms to be interviewed. The basic research instrument is an aide memoire containing the main points to be covered in the interviews (many of them are included in Appendix III of ATPS Working Paper No. 1). The key input in the case studies is the experience and ingenuity of the researchers in charge of them (though junior researchers should be involved to learn the relevant skills). Needless to say, the firms to be chosen for the case studies should be representative of the main positive and negative developments at sectoral level. If possible, not only old firms should be covered but also some newcomers.

With respect to the sector survey questionnaire, besides the questions mentioned in Appendix III of the proposal, it would be important to add a few questions on imports (of goods for resale, of inputs, parts, components, machinery and/or intangibles), on environmental technologies (have greater competition forced firms to adopt pollution prevention and waste minimization technologies often resulting in reduced energy and material usage?) and on the specific effects of some key policy reforms implemented in the country on the performance and technological capabilities of the firms to be surveyed.

4) regarding the research hypothesis, it is very important to find out in whether the firms have developed habits and practices of learning to learn under SAPs (and which specific SAPs) or before and how long has taken this process in the African context. Furthermore, in addition to size, the age and the type of ownership and management skills of the firm should be important variables affecting the ability to acquire or lose technological capabilities.

5) although national level technological capabilities (NLTC) are mentioned in the research objectives and hypothesis and in the conceptual framework, it is not clear how the data listed in Table 1 (if they exist) are going to be integrated into the main analysis. Perhaps it is better to concentrate the research on FLTC and on sectoral patterns. In this connection, since the sectoral dimension is very important in shaping firm behavior, more attention should be paid to the sectoral features and evolution in the research design and methodology.

6) to be able to suggest specific policy measures to foster technological capabilities in open developing economies, it is important to get inputs and suggestions from the surveyed firms and from institutions providing training and technology support and extension services. Furthermore, discussions with policy makers or macroeconomists should be envisaged as a permanent activity and not leave this critical topic for the end of the project. This is the only serious way to begin to fill the policy gap left by the current macroeconomic SAPs in this crucial area of the development process in developing countries.

d) Subscription to Journals

As mentioned ATPS is doing a good job in receiving several journals and diffusing their table of contents (and copies of the requested papers) among interested researchers.

ATPS has subscribed to 19 international journals. The only important omissions in the list of subscription are **Industrial and Corporate Change** in which scholars like Nelson, Dosi and other leading neoschumpeterians are publishing very interesting materials and **CEPAL Review** in which a number of Latin American papers on the subject are translated into English. However, so far only seven of the 19 journals in the list are received. Hence efforts should be made to catch up with this important service.

Publications

Since its inception, ATPS has published four newsletters (ATPS news) i.e. two per year and the fifth issue is due to be released soon. Except the newsletters, the publication record of ATPS has so far been poor. Only four working papers (ATPS WP 1, 2, 4 and 8) were published in 1995. Two of these papers were final reports of the previous networks.

It should however be borne in mind that the Network is only 2 years old, and perhaps expectations for more publications are too high.

Whereas WP 1 and 2 are useful conceptual and methodological papers, WP 4 by Wangwe is an interesting and perceptive contribution. WP 8 by Oyeyinka et al is a rather descriptive report. To transform it into a publishable paper further analytical and drafting work is needed.

WP 6 and 7 that were announced in ATPS News No. 3 are not going to be published because of the lack of cooperation from the researchers in editing their work. WP 5 that was announced in the same ATPS News will be published once a technical problem is solved.

WP 9 and 10 by Mazonde of Botswana and by Chambua of Tanzania, respectively have been received in March and April 1996 and are expected to be published soon.

The poor publication record of ATPS can be explained by two main reasons. First, a number of research pieces from the previous networks have been included in the mentioned book Technology Policy and Practice published by IDRC in 1995. Second, only in early 1996 six final reports of the first ATPS phase have been finalized. From our previous comments, it is apparent that further work is needed to transform them into working papers. However, executive summaries of these reports should be made available as soon as possible.

Some researchers have suggested that ATPS should publish a journal. This is an ambitious but long term project. In the meantime it is necessary to increase both the quantity and quality of research reports. The quantity will necessarily augment as soon as more reports are finalized. To improve the quality of the material, guidelines and special training to researchers by experienced scholars should be envisaged by ATPS.

Some researchers have suggested the production of a synthesis of research findings at national level as monographs and policy briefs of no more than 20 pages for distribution to stakeholders.

Annual Workshops, National Focal Points and Dissemination Workshops

The content and organization of both annual workshops have been generally well evaluated by the participants. The workshops are the main (and so far the only) mechanism for establishing professional contacts and learning about each other research interests. As already said, the peer review exercise has been considered a useful input in the research process. Furthermore, the lectures by international scholars has also been considered very useful by workshop participants. Some researchers have suggested, as already mentioned pre-Annual Workshop national seminars to examine the proposals and improve their quality. They have also suggested a meeting of Focal Points with the

Coordinator before the Annual Workshop to exchange experiences and develop common strategies to enhance the work of the Network.

The Nigerian Network has held two Dissemination Workshops. The first was a Pre-Dissemination Workshop held in May, 1996, organized by the Focal Point and attended by researchers to work out modalities for the presentation of results at Dissemination Workshop. The second was the Dissemination Workshop held in June 1996 which attracted about 50 participants drawn from policymakers the private sector, heads of Institutions and prospective researchers. This event received wide media coverage (the consultant saw newspaper cuttings containing glowing comments on the ATPS Network) and served as a strategic forum of interacting with stakeholders. It was after this Workshop that the idea of policy brief for wide distribution emerged.

The role of the Focal Points is critical and a sharpening of their Terms of Reference is necessary.

To be able to disseminate ATPS activities and to develop a proper network, the role of the National Focal Points is a crucial one. However, only six national focal points of the eleven appointed in October 1994 are active, according to the information provided by the Coordinator. In countries like Kenya and Tanzania the focal points were inactive during the whole 1994-95. In Kenya a new national focal point was appointed in early 1996 and the same has happened in Tanzania after the Steering Committee 5th meeting.

In the case of Uganda whose focal point is considered very active, in the meeting with him it was pointed out that ATPS is little known in the country. To redress this information gap more assistance to the Focal Point from the ATPS secretariat is needed. In this connection it was pointed out that seminars in which experienced people give lectures and national workshops should be organized to sensitize and stimulate researchers on the subject. Furthermore, in the meeting with the Uganda National Focal Point it was pointed out that the focal point should be informed of all the projects in the countries, it should monitor their execution and plan review meetings with the researchers. The Nigerian Focal Point was highly commended by his colleagues and hence the Nigerian Network is very active.

A meeting of Focal Points with the Coordinator was suggested by some researchers as a way of better defining their role and perhaps strengthening the weaker ones.

Besides strengthening the role of the National Focal Points, it is indispensable that national workshops should be planned in each member country of ATPS (except in Ghana, Kenya and Zimbabwe, ie. countries in which the Annual workshop have taken or will take place) in the next twelve months. In this connection, the experience gained in the training workshop made in Nairobi just before the last Steering Committee meeting should be used for the forthcoming national workshops.

Given the status of the research projects, a dissemination workshop with research users has taken place in Nigeria only. This activity should gain momentum in the months to come and should be carefully planned. It would be also useful to mount a Workshop to

discuss the findings of the study on the Volta River Authority in Ghana. It is a pity that these crucial aspects of the ATPS activities have not been discussed in the 5th Steering Committee meeting.

Regarding the first Biennial Conference the 5th Steering Committee agreed on a number of ideas to ensure the success of this important event and decided to postpone to a future date to facilitate proper planning.

It is clear from the above observations, that far more dissemination work is needed to diffuse the existence of ATPS and to ensure an audience among research users and policy makers. In the evaluators view, the only way to carry out such an ambitious task is to strengthen the National Focal Points through workshops and activities at national level. The Coordinator should facilitate the tasks of these focal points while concentrating his efforts in developing the cluster projects and revising the network project to be able to start it as soon as possible.

Finally, the Coordinator has made significant efforts to diffuse ATPS activities in Europe and North America and within international organizations working in this field. The positive response from new donors to fund ATPS is a tangible result of this activity that may certainly lead to the development of some intangible assets once the ATPS output is known and appreciated at international level.

The structure of governance and administration

As compared with the previous networks that were directly administered by IDRC with part time regional coordinators and national committees, ATPS has a centralized structure consisting of a Steering Committee, a full-time Coordinator and a National Focal point in each participating country.

The ATPS Coordinator has done a very good job as it was acknowledged by the Steering Committee when his contract was renewed and his salary was increased in the 4th meeting. The evaluators have been very well impressed by his commitment to the ATPS objectives, his good knowledge of the subject (as reflected in the several interesting papers he has recently written) and of the research making process and by his efforts in making ATPS a sustainable institution. The poor organizational arrangements for the evaluators activities in the first week of the mission in Kenya was the only point of concern.

Regarding the Steering Committee, the evaluators have been very well impressed by the work done by the Chariman (and some of its members) in guiding and developing ATPS. However, the way the SC has handled the appointments and activities of the National Focal Points and hence the dissemination activities as well as the procedure for assessing research proposals have not been as satisfactory.

ATPS is a very young organization without legal status, it is hosted by one of the donors, the IDRC, and is administered according to Canadian Government rules. This creates tension between the Coordinator and IDRC based on different administrative perceptions. It must be noted that the Steering Committee of distinguished experts, the dynamic and very active Coordinator and the IDRC while constituting a very high level tripartite can give rise to tension when consensus on the structure of governance and administrative procedures has not been achieved.

However it was the consultants observation that tensions have reached more than normal levels as expressed in the substance and style of the note from the Donors Consultative meeting in March 11, 1996 and the further exchange of notes between the Coordinator and the Regional Director of IDRC.

Taking this background into account, the decision on restructuring the structure of governance of ATPS taken in the 5th Steering Committee meeting in April 1996 is a critical one. The mature way in which the Steering Committee handled this difficult internal crisis is an encouraging development for the future of this long term initiative.

The modification of the ATPS governing structure to have a Board and a Steering Committee with different levels of responsibility seems a sensible way to clarify the asymmetrical roles of donors vis a vis other members of the Committee in ATPS initial phase. At the same time, the decisions to go ahead with the legal registration of ATPS before moving to an African institution and the further search of such a host institution are also very important developments.

Conclusions and recommendations

ATPS is an excellent initiative to fill a crucial gap in African development as was clearly stated by the founders. It is a logical follow up of the pioneer work done by its predecessors, the EATPS and WATPS.

The ATPS networks objectives are to:

- generate a critical mass of knowledge for strengthening policy making and for identifying and assessing the impact of past and present policy on technological change and its consequences for development;
- build a continuous interactive process of knowledge diffusion by fostering linkages among researchers and between researchers and the private sector, policy makers and other end users; and
- disseminate and encourage the utilization of research results through publications, workshops, conferences, seminars and policy round tables.

These are very pertinent objectives but it is unrealistic to think that they could have been achieved in just two years. Assuming these ambitious objectives as long term ones, what

ATPS has achieved in its first phase is significant and our evaluation is positive. At the same time, a number of modifications are required to be able to make further advances in the right direction.

Given the diffuse boundaries of the subject area in which research is concentrated, the different disciplines of the researchers, the scarcity of experienced scholars in this field in most African countries, the in existence of a constituency for technology policy and the low attention that technology issues have received in the governments actual (and not rhetoric) agenda, what has been achieved by ATPS in its phase is considerable.

Twenty eight funded research proposals of reasonable quality, two good annual workshops, some promising draft final reports and a very important network research project are tangible results of the initial phase of ATPS. At the same time, the mature way in which the Steering Committee has handled some difficult internal problems, the interest shown by new donors to support the organization and by existing donors in continuing supporting it are valuable signs of ATPS vitality.

The large variety of research topics, the concentration of researchers in very few countries, the poor publication record, the low visibility of ATPS in most member countries, the underdevelopment of network activities, the little impact on policy making are the other side of the coin.

Some of these weak points are unavoidable. It is not possible to have publications or dissemination activities with research users before the research projects are finalized. However, other weak points could have been minimized if all projects funded at the First Annual Workshop would have been finalized and their quality would have been better, if the National Focal Points would have been more active, national training workshops would have taken place or cluster projects would have initiated at an early stage.

In view of this assessment, the main recommendations to improve ATPS and to facilitate its growth process are as follows:

1) sensitization and training national seminars to popularize ATPS and assist researchers in formulating good proposals should be carried out in the next phase. Six such events should be planned in the next twelve months in countries where the Focal Points are active (eg Uganda) or where a new Focal Point has been appointed (eg. Tanzania) or those countries considered more promising by the Coordinator.

2) in the small grants competition quality and relevance should not be the exclusive criteria for funding projects. The participation of researchers working in different organizations including research users and/or of researchers based in different countries working in a similar topic should also be a basic criteria. The Secretariat jointly with the National Focal Points should play a proactive role, approaching senior researchers with potential interest in such undertakings. In that connection, the clustering of some small projects is a promising idea that should be put in practice first in a pilot study that ideally should be funded in the next Annual workshop.

3) the research proposals should be assessed by each Steering Committee member in a written form following common agreed criteria. Only in exceptional cases the Committee should be assisted by resource persons in such a task. The Coordinator should make all efforts to send the relevant material in time for facilitating the work of each Steering Committee member.

4) the honorarium paid to each principal researcher should be increased and should be partly disbursed during the project execution and not only at the end. This increase should not necessarily augment the total cost of each project because savings can be achieved in other items. In this way experienced researchers would have more incentives to participate in ATPS funded projects. At the same time, a more realistic organization of the time table in each project should be made to allow more time for writing up the final report.

5) the revised network project should be initiated as soon as funding is available. This is the only way to increase ATPS visibility working on comparative critical issues and to make an impact on policy makers. Besides reducing the number of countries it is indispensable to ensure a good comparative work by a team of senior researchers.

6) the availability of a number of finished draft projects will permit ATPS to launch the dissemination workshops with research users and policy makers. This is a critical stage in ATPS life that should be initiated as soon as possible but carefully planned. After the dissemination workshops executive summaries of the projects should be published and widely diffused. These executive summaries should be drafted bearing in mind a non specialized audience mostly composed of busy policy makers, research users and politicians. Some guidelines on how to draft the executive summaries should be prepared by ATPS.

7) to improve the quality of the final reports and especially to transform them into publishable papers ATPS should make a great effort to assist the researchers with guidelines and training in that crucial step of the research process. The working papers published by ATPS should be focused and well written papers and not lengthy research reports. Some of them should be of sufficient quality to be submitted to international journals. A medium term target in this connection would be to have a special issue of World Development containing the most relevant papers produced under ATPS. This is what has happened with the August 1994 issue of that influential journal in which some research supported by the African Economic Research Consortium was published.

8) in addition to the focused training activities mentioned above, the possibility of introducing postgraduate training in technology policy studies in some African universities with the assistance of ATPS should be carefully considered.

9) the structure and governance of ATPS require careful consideration: to establish ATPS as an autonomous organization would not only require a legal entity and an adequate host institution able to manage a sizable amount of funds, but will require setting up support mechanisms to ensure a careful development of the different research programs,

the establishment of links at national level and across countries and adequate schemes for the judicious use of the resources that different donors organizations will provide.

Addendum

In drafting this addendum the consultants have tried to address the issues raised by the Board to our previous report, through the ATPS Co-ordinator in his letter of October 30, 1996. We have accepted the Board's disagreements with some of our previous recommendations and have concentrated on those items which require further elaboration.

Recommendation 8

-In addition to the focused training activities mentioned above, the possibility of introducing postgraduate training in technology policy studies in some African universities with the assistance of ATPS should be carefully considered. The ATPS Coordinator should explore with selected African universities and with the Director of United Nations University Institute for Technology (UNU/INTECH), the possibility of starting such programmes.

Rationale

There is a general feeling that issues of policy including linkages between researchers and policy makers, policy formulation and implementation are weak in most African countries. There is thus a need to produce a cadre of people with skills in this area to spearhead greater understanding of policy issues throughout the continent. The ATPS Coordinator could initiate discussions with leaders of selected universities with the aim of developing a programme, at the post graduate level, that could serve as pilot to be pursued on a wider scale. There is already a precedent set by the United Nations University Institute of Technology (UNU INTECH) in which the Institute runs a joint postgraduate degree with MERIT in Maastricht. This is a model to be followed and not necessarily adopted in its entire form. This is seen as a long-term strategy of institutionalizing the excellent ATPS initiative.

Recommendation 10

To improve the quality of the final reports and to transform them to publishable papers, more time should be allocated to the production of the report at the end of the research.

In response to the further questions raised by the Board the consultants have the following comments:

1) There can be no doubt that the national focal points are key players in the success of the ATPS mission. One way in which they could be assisted in their role is to organize special focal point workshops run by the ATPS Coordinator or other experts to widen their understanding of their role as advocates of ATPS and to organize local events such as the national seminars to examine and improve the quality of proposals and dissemination workshops.

2) There are countries which have a relatively large number of researchers which will always produce more and better proposals. At this time in the history of ATPS the aim should be to use these researchers to assist countries where researchers are few and the ATPS is weak. Thus intercountry workshops on the role of focal points, proposal writing and organization of dissemination workshops etc could help improve the geographical spread of ATPS activities in the long run. This could also contribute to improving the effectiveness of the annual workshops. As already mentioned in the report, some researchers felt that pre-annual workshop preparation should be undertaken at the national level to help researchers and also provide an opportunity for interacting with prospective researchers, policy makers and other stakeholders.

3) In the time given, it was not possible to meet with potential users of ATPS research. This could have been important as it would have provided comments from this crucial group.

4) The Terms of Reference of the Consultancy were clearly stated. It was possible to meet many of the researchers and together to reflect on the mandate of the consultancy. The consultants believe that their mission was to assess the progress achieved by ATPS in fulfilling its original mission in the short time of its existence and to make recommendations to enhance its performance. They consider that their mission have been accomplished.

Terms of Reference of Evaluation of ATPS

ATPS MISSION AND OBJECTIVES

Mission

The mission of ATPS is to contribute to economic and social development in Africa by improving the quality of decision making and strengthening institutional capacity for the management of technological development through user-oriented research, dissemination, training, and close interaction with decision makers and research end-users.

Objectives

The ATPS networks objectives are to:

- (i) generate a critical mass of knowledge for strengthening policy making and for identifying and assessing the impact of past and present policy on technological change and its consequences for development;
- (ii) build a continuous interactive process of knowledge diffusion by fostering linkages among researchers and between researchers and the private sector, policy makers and other end users; and
- (iii) disseminate and encourage the utilization of research results through publications, workshops, conferences, seminars and policy round tables.

Objectives of the Consultancy and suggested Steps

- Bearing in mind the historical evolution of the ATPS network from its forerunners, the evaluation will focus on the following:
- the effectiveness of its modes and structures of governance and administration;
- the overall quality of research proposals (a) submitted and (b) funded;
- the extent to which a viable regional research community has been established particularly as concerns professional contacts, collaborative and comparative research;

- the networks expansion and its interdisciplinary nature;
- the extent to which genuine and meaningful linkages have been established with public policy communities within member countries;
- the suitability and effectiveness of the informational exchange, capacity building and dissemination activities it has undertaken and;
- other matters relevant to the mandate and objectives of the network.

In carrying out this evaluation it is expected that the evaluator will consult with relevant persons in the donor agencies, ATPS network secretariat, selected focal points and a sample of other network members. The evaluator is expected to also visit related organisations in Nairobi with similar mandate and objectives.

Annex II

Persons interviewed by the evaluators

a) Nairobi, Kenya

Dr. T. Adeboye, ATPS Coordinator

Mr. G. Githembe, ATPS Secretariat

Dr. E. Rathgeber, Director IDRC-EARO

Dr. O. M.Ogbu IDRC-EARO

Dr. P.Vitta, UNESCO

Dr. D. Court, Rockefeller Foundation

Mr. H. Mulle, Chairman Steering Committee ATPS

Prof. L. Mytelka, Steering Committee ATPS

Dr. A. Adubifa, Carnegie Corporation of New York

Dr. M. Mwamadzingo, University of Nairobi, Dep. of Economics

Prof. D.A. Bekoe, Steering Committee ATPS

A.R.Gacuchi, Ministry of Research, Technical Training and Technology and ATPS
National Focal Point

Prof. C.Ngahu, University of Nairobi, Fac. of Commerce

Dr. B.J.Ndulu, African Economic Research Consortium

Mr. F.G.Murage, Kabiecon Food Security Policy Consultants

Dr. H. Bwisa, Jomo Kenyatta University of Agriculture and Technology

b) Kampala, Uganda

Dr. Z.M. Nyiira, Uganda National Council for Science and Technology and ATPS National Focal Point

Dr. J.F. Kakule, Uganda National Council for Science and Technology

Mr. P.S. Kabasa, Uganda National Council for Science and Technology

Mr. D.Mwesigwa, Uganda National Council for Science and Technology

Mr. D.Kasozi, Uganda National Council for Science and Technology

Dr. O. Fred, Economic Policy Research Centre

Mr. P.N.Sagala ; Ministry of Trade and Industry

Dr. A.H. Bauhuta, Makerere University, Dep. of Economics

Mr. A. Nuwagaba, NISR- Dept of Social Work

Ms. J. Ahikire, Centre for Basic Research

c) Dar es Salaam, Tanzania

Prof. H. Mlawa, Institute of Development Studies

Prof. Okoso-Amaa, Institute of Development Studies

Prof. S. Rugumanu, Institute of Development Studies

Dr. S. Kashinje, Institute of Development Studies

Dr. S.Wangbe, Economic and Social Research Foundation

Dr. M. Sheya, Center for the Development and Transfer of Technology

d) Harare, Zimbabwe

Prof. C.J. Chetsanga, Director General, Scientific and Industrial Research Centre (SIRDC)

Mr. Benson M. Zwizwai, Institute of Development Studies, University of Zimbabwe, ATPS Focal Point

Dr. G. Mandishona

e) Nigeria

Prof. Banji Oyeyinka - ATPS Focal Point

Prof. G.O.A. Laditan

Mrs. Adeyinka

Prof. Fani Olekesusi

Prof. Bamiro

Prof. Kayode - Member, Steering Committee. ATPS