

Guidelines for Research in Partnership with Developing Countries

11 Principles

**Swiss Commission for Research Partnership
with Developing Countries**

KFPE

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Foreword: Setting a new course¹ – in research too?

Why change course?

For decades, scientists have been issuing warnings about the results of a further increase in the world's population, the destruction of the environment and the steadily-advancing changes in the climate. If they are right, human life under any acceptable conditions will be seriously endangered in the foreseeable future². Scientific research can and must help to solve the problems that confront us. However, research can only make a decisive difference if two preconditions are met. Firstly, the world-wide potential for scientific research must be more evenly distributed around the globe. Secondly, scientists, the public, and political and economic powers, must work together.

Both solidarity and commonsense therefore demand that the capacity to do research in developing countries should be furthered to the point where it is possible to carry out, on a world-wide scale, the kind of cooperative research that has long been normal in industrialised countries. «Cooperation» here is not aimed at improving economic competitiveness, as was frequently the case in the past. It means a responsible common search for solutions to the problems confronting humanity as a whole. Competition is no longer appropriate – what is needed is complementarity and synergy.

This idea is gradually gaining ground in some industrialised countries^{3,4} (Appendix 3). The same is true of developing countries, as is demonstrated by the activities of the Third World Academy of Sciences (TWAS)⁵. The Academy was founded in 1983, and now has representatives from more than 70 developing countries, and has become perhaps the most important forum for science in the South. Its activities are based on the desire to bring about a breakthrough in scientific knowledge and research in the developing countries, so that scientific activities will be given the importance they deserve, and will be able to become independent.

These efforts can only be welcomed, and deserve our fullest support. Nevertheless, they do bear the risk of creating a new polarisation of research between North and South, which can only be detrimental to the idea of *one* world-wide scientific community⁶. This ideal is also made more difficult to reach by the differences that exist between the countries that are lumped together under the description «Third World» or «Developing Countries»⁷. Strictly speaking, this kind of categorisation is no longer valid. The differences between the «least developed» and the «newly-industrialised», or «threshold» countries are often larger than the differences between the latter and the industrialised countries. The established expression, «developing countries» is used in the following text for want of a better one – but with the understanding that working together in partnership will need to be tackled quite differently from one country to another.

¹ Schmidheiny S., 1992: Change of Course - a global business perspective on development and the environment. Cambridge, Mass. MIT Press

² Freyvogel T.A., 1998: Research partnership with developing countries: today's greatest challenge. SANW/ASSN INFO SPEZIAL 1/98

³ SDC, Policy and Research Section, 1993: SDC Research Promotion Policy. Obtainable from SDC, Policy and Research Section, Eigerstrasse 73, CH-3003 Bern

⁴ Gaillard J., 1996: Les collaborations scientifiques Nord-Sud: un examen critique de huit programmes d'aide à la recherche. In: Les Sciences hors d'Occident au XXème siècle, 7, 220-253, ORSTOM éditions, Paris

⁵ Third World Academy of Sciences (TWAS), c/o International Centre for Theoretical Physics (ICTP), P.O. Box 586 - Strada Costiera 11 - 34100 Trieste - Italy (<http://www.ictp.trieste.it/twas/twas.html>)

⁶ Gaillard J. & Schlemmer B., 1996: Chercheurs du Nord, chercheurs du Sud: itinéraires, pratiques, modèles. In: Les Sciences hors d'Occident au XXème Siècle, 6, 113-135, ORSTOM éditions, Paris

⁷ Kappel R., 1997: Was heisst Entwicklungsländer und was heisst Entwicklungszusammenarbeit? In: Partnerschaften für die Zukunft. Die Zusammenarbeit der ETH Zürich mit Entwicklungsländern. Schulleitung der ETH Zürich

What are we steering towards?

As a possible way of reducing the imbalance in research between developing and industrialised countries, the «Swiss Strategy for the Promotion of Research in Developing Countries»⁸ suggests that **research partnerships** should be set up. These are characterised as projects in which groups of scientists from two or more partner-countries carry out long-term, trans-disciplinary collaborative research on problems that are important to all the partners. As far as possible, teams should be chosen on a basis of equal representation, and all those involved should have opportunities for continuing education and training⁹. Research partnership in this sense represents a clear break with previous practice. Research cooperation with developing countries still tends to occur only in isolated instances. This is certainly the case in Switzerland. Furthermore, when there are cooperative projects, attention is generally concentrated on the results of the research, rather than on the methods used, or on any effect the project might have on the development of the partner-countries, or on the building-up of their capacity for carrying out independent research. Happily, there are exceptions^{10,11,12}. They show that research partnership is indeed possible, and can make an enduring contribution to increasing the research capacity of partner-countries¹³.

Research partnerships make heavy and unusual demands on the partners. Those taking part need to be free of preconceived ideas, modest, and ready to accept other scales of values. These are preconditions for bridging the gap between cultures. It is because the situation is new that these Guidelines have been written. They are intended in the first instance for those who are applying for grants for research projects in partnership, and for government and private funding agencies. They are therefore tailored in the first instance to the needs of the (Swiss) research community. Nevertheless, it is hoped that they will also be useful to partners in the South who are planning projects, and to those who have to evaluate research activities.

At present, the international research community is going through a demanding learning process. This can be seen in the many conferences held and documents written in both developing and industrialised countries (see Epilogue). One result of this process is the growing awareness that the results of scientific activities are not the only criteria by which they should be judged. The interaction between scientists and the public, and between research and everyday life, must also be included – though the way in which this is to be achieved has yet to be defined. The present Guidelines should be seen as a further expression of the firm will of a growing body of people in Switzerland, who are involved in doing research or formulating research policy, to make their own specific contribution to the creation and establishment of research capacity in the countries of the South, and thus to make a lasting contribution to world-wide sustainable development.

⁸ Published by the Swiss Academy of Sciences (SAS) and the Swiss Agency for Development and Cooperation (SDC/EDA), 1993. 2nd edition, 1996, obtainable from the KFPE Secretariat. Versions in German, French and English on the KFPE Home-page

⁹ see footnote 8

¹⁰ Traore K., 1996: Préface. In: Sempervira, numéro 5. Centre suisse de recherches scientifiques en Côte d'Ivoire. 01 BP 1303 Abidjan 01

¹¹ Tanner M. et al., 1994: Developing Health Research Capability in Tanzania: From a Swiss Tropical Institute Field Laboratory to the Ifakara Centre of the Tanzanian National Institute of Medical Research. Acta Tropica 57, 153-173

¹² Freyvogel T.A. & Tanner M., 1997: Forschung in Ifakara. Vom Feldlaboratorium des Schweizerischen Tropeninstituts zum tansanischen Ifakara Centre. In: 75 Years Baldegg Sisters, Capuchin Brothers in Tanzania. Schweizer Kapuzinerprovinz, Luzern

¹³ Maselli D. & B. Sottas (eds.), 1996: Research Partnerships for Common Concerns. Proceedings of the International Conference on Scientific Research Partnership for Sustainable Development - North-South and South-South Dimensions. Lit Verlag, Hamburg: 192 pages

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Introduction to the Guidelines

Basic principles

Research in and with developing countries should – indeed, must – lead to the strengthening of their research capacity¹⁴. This requires mutual respect, honesty and openness. The partners must be able to communicate effectively, and must be prepared to commit themselves to a long-term involvement. In addition, research relevant to development should have results that are visible and palpable for the local community¹⁵. The considerable experience of local people should be taken seriously and made use of whenever possible.

A basic requirement for the establishment of mutual trust is a continuing dialogue and the exchange of experience among all those involved, including the members of the local community. This includes the people who do not have an «official voice», especially the women. In spite of the rigours of scientific work there is a need for personal – even emotional – involvement, and an inner readiness to take part in what is going on. This is particularly important for partners from industrialised countries. Not only do they need to be modest, but they may well find that the project makes greater demands on their time, endurance and perseverance than their work has done in the past^{16,17}.

Tackling common problems together can motivate all the partners to cooperate actively. The best possible division of tasks and responsibilities, based on the different strengths of the partners, offers the best chance that synergic effects will be produced and made use of, and that all those involved – right up to the end-user – will really benefit from the research activities.

Like any kind of cooperative enterprise, research partnership must always be orientated towards particular goals and a specific setting. Research partnership is therefore not always easy to categorise, but nevertheless, three levels can be distinguished in connection with the type, scope and duration of the collaboration: **Cooperative Projects**¹⁸, **Cooperative Programmes**¹⁹, and **Institutional Cooperation**²⁰. The Guidelines apply first and foremost to cooperative projects, which involve the most people. Once a problem has been identified, research in partnership essentially develops in four stages.

1. One or more partners are found who share an interest in doing research on some aspect of the problem.
2. The partners work together to clarify the theme, and make concrete plans for carrying out the work, including details of organisation and financing.
3. The partners work together on the research, sharing the responsibility for leadership and preparing reports and publications together.
4. Finally, the collaborative effort must be brought to a conclusion. The partners may go their separate ways, or they may continue to work together on new tasks, for example putting the

¹⁴ see e.g. RAWOO (Advisory Council for Scientific Research in Development Problems (The Netherlands) 1996: Towards a European Science & Technology Policy for Development. Publications no. 13: 17

¹⁵ RAWOO 1994: Development and strengthening of research capacity in developing countries. Publications no. 5

RAWOO-Home-Page: <http://www.nuffic.nl/ciran/rawoo>

¹⁶ De Lattre 1996: Propositions pour une réorientation de la recherche française au service du développement. Rapport final. Comité National de coordination pour la recherche au service du développement. 46 pages

¹⁷ Kaufmann Chr., 1997: Vanuatu. Kunst der Südsee. Museum der Kulturen Basel (Hg.), Christoph Merian Verlag Basel

¹⁸ Projects: Generally directed towards tackling a discrete, concrete problem, of relatively short duration (a few years) and usually with a relatively modest level of personnel and financial support.

¹⁹ Programmes: Generally deal with a complex of problems; usually medium-term (some years) and often more extensive than a project; a programme may incorporate a number of separate projects. In the long term, programmes require more personnel and financial support.

²⁰ Institutional cooperation: Mutually beneficial cooperation between institutions in one or more areas. They are generally based on an agreement which is intended to last for a long time - often for an indefinite period. The cooperation is not necessarily more extensive than collaboration within a programme. The situation in which the institutes must work (political, administrative etc.) may play a more important role.

results into practice, doing further research along the same lines, or tackling new problems together.

About the contents

The Guidelines comprise **11 Principles** for research in partnership between an industrialised country (in this case, Switzerland) and developing countries. For each, there is a description of the **overall aim, practical suggestions** as to how it can be achieved, and a **«checklist»** of questions for evaluating how far a specific proposal fulfils the aim. The **overall aim** represents in one sense an ideal long-term goal - the maximum possible level of partnership that the project could reach. How far the goal can be reached will depend on the situation. The **practical suggestions** for implementation offer possibilities for achieving the aim. Finally, the **evaluation questions** are intended as a working tool - a «checklist» – for both applicants and funding agencies. They will naturally need to be adjusted to the particular situation and if necessary amplified; in the present form they make no claim to completeness.

The 11 Principles are all closely linked, and no hard-and-fast boundaries can be drawn between them. The first seven are more immediately concerned with the details of how to set up and implement a research project in partnership, whereas Principles 8 to 11 go beyond what is usually considered as «research» in a strict sense. **Principle 10, «Increase research capacity» is of central importance. It is the goal that should be reached if the previous nine principles are followed.** It is precisely those aspects of research in partnership that go beyond the usual definition of research that represent the «Change of Course» postulated in the Foreword. In another publication²¹ from a group of Swiss scientists we read, «*Researchers need to accept their share of responsibility in social development by considering the specific needs of politics, economy and society*». This statement does not only apply to industrialised countries but also – to an even greater extent – to the countries now in the process of development. Research workers can no longer feel that their job is done when the results of their work have been published. They should also concern themselves as far as they are able with putting the results into practice. In a comprehensive sense, they should take into account the far-reaching effects of their activity on human life and human experience.

In the **Appendix** there are some **case-histories** to illustrate the Principles. These make no claims to perfection, but they do illustrate, with generally positive examples, how the principles postulated in the Guidelines can function in successful research partnerships. In addition, the Appendix contains a list of frequently-encountered obstacles, difficulties and negative experiences in research partnerships²² and, for comparison, a set of guidelines independently developed by Jacques Gaillard²³.

Experience has taught that for those who want to embark on a partnership, one of the greatest difficulties is **to find new, suitable partners**. This is true for scientists both in industrialised and in developing countries - but is probably even more difficult for the latter. The mechanisms that scientists have for making contact with each other function far less effectively for scientists in developing countries, because their access to scientific journals, international conferences and the like is limited. The problem has been recognised, but is still waiting for a really satisfactory solution - though the further spread of modern means of communication, especially e-mail and the Internet, may help to some extent.

The Guidelines go into the question of the **management** of the available **financial resources** in Principle 5. However, no information is given about the acquisition of funds; the possibilities are very varied, change frequently, and are different in every situation. Information can be obtained from various sources. The basic principle needs to be stressed that each

²¹ Visions by Swiss Researchers. Research on Sustainability and Global Change – Visions in Science Policy by Swiss Researchers. Obtainable from ProClim-, Bärenplatz 2, CH-3011 (32 pages) (or available on <http://www.proclim.unibe.ch/visions.html>)

²² We are particularly interested in having comments and suggestions on this topic.

²³ Gaillard Jacques F., 1994: North-South Research Partnership: Is Collaboration Possible between Unequal Partners? Knowledge and Policy, 7/2, p. 58

partner should make a contribution, though this does not necessarily have to be financial. If all parties contribute, it becomes more likely that the research priorities and needs of all parties will be adequately taken into consideration²⁴ This increases the chances that the cooperation will be successful, following the principle of reciprocity in rights and duties.

A further question that is not considered in the Guidelines is that of the criteria by which the relevance and scientific quality of a project might be judged. It can be assumed that these are generally well known, and as a rule the donors of funds will insist upon their being followed. However, it should be emphasised that the criteria used to evaluate research activities in partnership should consider both their **scientific merit** and the extent to which they will lead to **genuine partnership**.

²⁴ RAWOO 1996 (see footnote 14)

The 11 Principles of Research Partnership:

Decide on the objectives together

Build up mutual trust

Share information; develop networks

Share responsibility

Create transparency

Monitor and evaluate the collaboration

Disseminate the results

Apply the results

Share profits equitably

Increase research capacity

Build on the achievements

1st Principle:

Decide on the objectives together

Overall aim

Often it is the partner from the North who takes the initiative and makes suggestions about topics for research. However, it is not really helpful to offer possible partners a more-or-less completely formulated and developed research project. They will then hardly be in a position to incorporate their own ideas and needs. Instead, the theme should be decided upon and the project developed in discussion between all the partners, including the people who will eventually use the results, who should be actively involved in the work as far as this is possible, and to the extent that is feasible for them.

Two aspects must be considered. On the one hand, research priorities must be set which fit in with the interests of all those involved. On the other hand, these general priorities must be distinguished from the research question to be answered by a particular project. This needs to be precisely formulated. It will be based on one or more working hypotheses. As far as possible, the actual methods used for tackling the research should be participatory ones²⁵. These may have to be newly developed, and will need to be adapted as the research proceeds.

Since the problems to be tackled are usually so complex, a form of collaboration will be needed that promotes trans-disciplinarity and holistic thinking²⁶. Such collaboration is most likely to find appropriate answers to socially significant problems.

Practical suggestions

Someone who has an idea for a research project and would like to carry it out in collaboration with a partner should go to the partner as soon as possible and discuss and plan the project in detail. This will avoid essentially one-sided interests being considered. If a project is one-sided, the partner whose interests are neglected may not really be able to identify with it. It must be remembered that the process in which the partners «find» each other is usually very time-consuming. This is particularly true for the members of the teams who are directly involved in the research activities. Nevertheless, the effort is rewarding in many different ways.

In order to involve wider circles – including the local population – in both the preparations and the actual research work, special meetings need to be organised, and if necessary information must be prepared in a form in which it can be understood by the general public²⁷. Collaboration with NGOs can be very helpful for this purpose. Wherever possible, local traditional knowledge should be taken into account. This can help to avoid false assessments of the situation by outside «experts», and can prepare the ground at an early stage for putting the expected results into practice.

Checklist

- Who originally proposed the project?
- Is the research question precisely formulated? Do all the participants understand it?
- Are the working hypotheses clearly formulated, and have the methods for addressing them been decided upon?
- Did all the relevant actors and people who will be affected by the research participate in developing the theme of the research?
- Does the project take the interests of all the participants into consideration, especially those of the final user in the South?

²⁵ Bolay J.-C. et al. (1999): *Environnement urbain – Recherche et action dans les pays en développement* Birkhäuser Verlag, Basel

²⁶ See ProClim- (footnote 21)

²⁷ See Appendix

- Does the research planned fit into the partners' existing national or regional research policies?
- Does it serve the interests of all the partners?
- Does the proposed research give due consideration to the social, cultural, political, economic, ecological and technical needs and situation of the partners?
 - If «yes», how?
- Who are likely to be the main beneficiaries of the knowledge resulting from the planned research activities?
 - Researchers From Developing Countries / From Industrialised Countries
 - Research Institutions From Developing Countries / From Industrialised Countries
 - Government bodies From Developing Countries / From Industrialised Countries
 - Private industry From Developing Countries / From Industrialised Countries
 - NGOs From Developing Countries / From Industrialised Countries
 - The population From Developing Countries / From Industrialised Countries
 - Others (which?)
- Is the traditional knowledge of the partner/ the local population incorporated in the research plans?
 - If «yes», how?

2nd Principle:

Build up mutual trust

Overall aim

Without mutual trust, cooperative work can hardly be imagined. The creation of trust between partners who may be very different requires time and patience, and considerable ability to put oneself in another's place. Prejudices must be got rid of, and a framework must be created that will stimulate the desire for an honest and open research collaboration.

Besides cooperation with partners who are already well-known, it is desirable to look systematically for new contacts and relationships, not only to enlarge the personal networks of the participants, but to strengthen those of the collaborating institutions.

Practical suggestions

Positive experiences in the past promote trust; therefore it is often a good idea to take up contact again with research workers, research institutions, government bodies and communities with whom previous collaboration has been successful. It is a good idea to analyse the earlier collaboration carefully, and characterise all the partners as objectively as possible. It is also important to look at how they are embedded in their social, institutional, political and economic framework. This helps to avoid false assessments and exaggerated expectations, and makes it easier to take action quickly to avoid negative consequences. New partners must be found by a process of active searching, for example in lists of publications, in the Internet or at international conferences. If possible, personal contact should be made. Visiting a research institute that is being considered, or asking for references, can provide valuable information about a hitherto unknown partner. It is worth considering short-term exchange visits so that researchers can get to know each other in a working situation before beginning formal collaboration.

Checklist

- Do all the partners know each other well enough, and do they trust each other (positive or negative experiences) ?
- Are descriptive outlines and references available for all suggested partners?
- Are there plans to make a systematic search for other partners?
 - If «yes»: Who? How?

3rd Principle:

Share information; develop networks

Overall aim

A well-functioning communication system is decisive for satisfactory collaboration between partners who are often far apart geographically. It is vital to be able to exchange information regularly and comprehensively – to set up a functioning «network». But in addition, since there is often a considerable «cultural distance» between the partners, it is necessary for them to adjust their ways of thinking and expressing themselves so that they can come closer to each other. Without both of these, effective coordination is impossible. Ideally, all partners should have a comparable level of information and knowledge about the joint research activities and the environment in which they are being carried out. This means – especially for the partners in the South – being linked to regional and international information networks.

Practical suggestions

First and foremost, it must be made clear to all those involved – whether they are working at home or abroad, and including students – that communication within the group is extremely important.

The next step is to find out what means of communication are available to the partners. If these are not adequate, action must be taken to enable the partners to acquire the necessary infrastructure (telephones, telefax-machines, computers with e-mail or Internet connections). Such additional expenses should be included in the budget.

In addition, it is a help to have clear agreements about the regular exchange of information. Frequent and regular communication can help greatly to reduce the somewhat isolated position in which the Southern partners often find themselves.

Checklist

- Has provision been made on both organisational and technical levels for all the partners to have sufficient regular contact with each other?
 - If «yes», what has been done? What technical means of communication are available?
 - If «no», will it be possible to support the partners in improving or expanding their technical facilities?
 - If so, how?
- Do all the partners have adequate opportunities (and the necessary technical equipment) to make contact with international organisations, data banks etc? Is everybody sufficiently familiar with the use of the technical equipment that is available?
 - If not, is the project in a position to support the partners in carrying out necessary extensions and improvements to their technical infrastructure? How?

4th Principle:

Share responsibility

Overall aim

Both the scientific and the technical leadership and management responsibility for the project should be carried as far as possible by all the partners, taking into consideration the competence and the resources of each. If all the partners are included at all levels of the project, they will identify more strongly with the research activities. Experience has shown that a project is very often perceived as belonging exclusively to the Northern partners; in the long run, this makes it difficult for the Southern partners to identify with the activities. If all partners are involved in administration, it also gives those with less experience the opportunity to gain expertise in research management.

Practical suggestions

An early discussion between the partners to clarify the exact division of responsibility for the management of the project is of paramount importance, especially when the partners come from different cultural backgrounds. As the discussions often take place in a language which is foreign to all the participants, misunderstandings can very easily arise. It is to be recommended that the division of responsibilities should be defined in face-to-face discussion, and recorded in writing. In many countries, agreements made with the partners will have to be confirmed by their superiors.

Checklist

- Will all the partners be included in the scientific supervision and the administrative responsibility?
- Will all the responsible partners have an opportunity to see all the documents relevant to them?
- Are the personal, organisational and financial conditions necessary for the taking over of responsibility fulfilled in the case of all partners?
 - If not, what needs to be done?

5th Principle:

Create transparency

Overall aim

If all the partners contribute to the resources needed for the planned project their commitment to the common enterprise will be strengthened. The worth of contributions made in forms other than money must be appropriately acknowledged. To satisfy the need for transparency, the source and amount of all resources, especially money, and the way they have been used, must be declared openly to all partners. Financial decisions should as far as possible be taken by all the partners together– and the amount of material support given should not be the basis for allowing some partners a stronger voice in decision-making than others.

Practical suggestions

To avoid conflict, it is advisable to prepare a binding agreement on paper (a «Memorandum of Understanding») which lays down the contribution to be made by all of the partners to the work, and their rights and duties. In order that the partners who are entitled to do so can assure themselves that the agreement is being adhered to, they must be allowed unlimited access to the relevant documents. Regular balancing of the accounts, audits, and periodic checking of inventories are also measures which help to create transparency. Furthermore, the requirements of donors for financial statements must be fulfilled.

Checklist

- Are the mutually agreed financial and other contributions and the rights and duties of all partners recorded in writing?
- Will all partners be fully informed about where financial and other resources come from, how their use is planned, and what they have in fact been used for?
- Are there clear and fair rules about who has the authority to make what financial decisions?

6th Principle :

Monitor and evaluate the collaboration

Overall aim

Both the progress of the research, and the development and functioning of the partnership, should be continuously monitored²⁸. Furthermore, there should be regular internal or external evaluations, which should assess as accurately as possible how successful (or unsuccessful) the project has been from the point of view of partnership in all its aspects: management, communication, decision-making, implementation, improvement of the capacities of all partners, etc.

Practical suggestions

Exchange of information and regular meetings help the partners to become aware of problems in good time, and to deal with them effectively. In many situations, it is a good idea to ask each of the partners to keep a diary. Interim reports etc. should whenever possible be written jointly. Drafts must be shown to all partners, and their comments invited. For periodic internal evaluations the criteria should be worked out together, and as early as possible; they should be adapted if necessary if the situation changes. For external evaluations care must be taken that the evaluating team includes representatives from developing as well as from industrialised countries. The evaluators must be free to carry out the evaluation as they see fit, in the framework of the task assigned to them.

Checklist

- Is monitoring of the functioning of the partnership foreseen?
 - If «yes», how is it to be carried out?
- In internal evaluation, are all the partners actively involved in a balanced way?
 - If not, why not?
- Have the criteria for internal evaluation been jointly defined, and are they known to all?
- Is an external evaluation advisable?
 - If so, is the evaluating group appropriately constituted and is its task appropriately defined?
- Are the planned or promised financial resources adequate for monitoring and evaluation?

²⁸ «Monitoring» requires the constant checking of achievements against a catalogue of defined indicators (criteria)

7th Principle:

Disseminate the results

Overall aim

It is a basic principle that there should be unlimited access to the results of research. According to the situation, research projects in partnership between developing and industrialised countries may bring very different partners together. Not all of them will have the same experience in publishing their results, and certainly not the same access to appropriate media. Care must therefore be taken that all partners can take part to the proper extent in the dissemination of the results. This is especially true for scientific papers in respected international journals²⁹.

Since research projects in partnership between industrialised and developing countries are very often directed towards concrete problems, care should be taken that the results of the research are also communicated adequately to the people who will finally use them. This will smooth the way for putting the results into practice with the active participation of the local community.

Practical suggestions

Because of differences in experience with publishing, the partners involved will need to work closely together in preparing papers. All those who participated in the work should have the same rights, e.g. to be named as one of the first authors, but there is no justification for making concessions, for example including as authors people who made no significant contribution.

To make the results widely available, they will also need to be described in a way that can be understood by the general public, if necessary translated into local languages. The transfer of knowledge can take place in many ways, for example through lectures, travelling exhibitions, discussions, drama etc. Very often, the responses to efforts like this can be useful to the research team as well³⁰. For scientists, the task of informing the public about the results is often an unaccustomed and difficult one; it may be advisable to request the help of more experienced people, institutions or organisations (e.g. a local NGO; see the case studies in the Appendix).

Checklist

- Must access to or dissemination of the results of the research be limited?
 - If so, whose access should be limited? Why?
- Are publications for a wider audience planned as well as scientific papers in international and national journals ?
 - If so, what?
- Are there concrete plans for passing on the new knowledge resulting from the project to the people who are directly affected?
 - If so, what is planned ? (Possibilities include: seminars, workshops, conferences, lectures, public meetings, information through radio and television, travelling exhibitions, clearly-written leaflets etc. for the general public ...)
- Are there plans to include appropriate people out of the target group («opinion leaders», «stakeholders», important local and regional actors) in the process of spreading the information and putting it into practice. Is including them a practical possibility?
 - If «yes»: Who? How?

²⁹ See activities of the International Federation of Science Editors (IFSE), Italy; http://www.alpha400.cmns.mnegri.it/en/other_services/ifse/

³⁰ See the Convention of Lomé and RAWOO 1996 (footnote 14)

8th Principle:

Apply the results

Overall aim

Research in partnership between developing and industrialised countries often claims that it is related to real life and is concerned, at least to some extent, with the problems of disadvantaged communities. Partnership projects thus raise expectations among the partners from the developing country and in the community. But these hopes are often disappointed – for example, very often the scientists fail to come back to the place where they carried out a field survey, even to say what they found – let alone to help with putting the results to use. It is not enough to disseminate the results, however good the format is. As far as it can, the research team has an obligation to ensure that the results are really used to benefit the target group.

Practical suggestions

The process of converting scientific results into a practical project and actually implementing it is extremely complex. All kinds of problems can arise in practice, for instance with the acceptance of the project, the actual methods to be used, the finances or the distribution of responsibility. It is almost essential to work together with people or institutions like NGOs and government bodies who already have a particularly good contact with the community, and in some cases also with commercial enterprises – it may even be best to establish a special firm for the purpose of making use of the research results. It is always a good idea to keep political decision-makers and/or government bodies well informed about the progress of the research and its results, and discuss with them possible ways of putting the results into practice, whether or not they are directly concerned. This can help to convince government officials of the importance of the research, so that once the actual research phase is over they will play an active part in ensuring that the results can be put into practice, and the expectations of the community fulfilled, without unnecessary delay.

Checklist

- Are there concrete plans, considering the local, national and regional conditions, to use the results of the research for the benefit of the target group(s)?
 - If so, what kind?
 - If not, why not?
- Will political decision-makers, government bodies and NGOs be informed periodically about the progress of the research, and will possible steps towards application be discussed with them?
 - If «yes»: Which? How?
- Will all the people concerned take part in the plans to put the results into practice, including the members of the target group(s)?
 - If «yes»: Which? How?

9th Principle:

Share profits equitably

Overall aim

Research results have intellectual worth, and may also have a commercial value. All partners should share equally in the benefits of both. A very frequent complaint of partners from developing countries – and without a doubt one that is often justified – is that partners from industrialised countries have published results under their own names that were the results of collaborative work (and have then held the copyright), or have even benefited financially (taking out patents). This should not be allowed to happen.

Practical suggestions

When results are reported, all those who were involved to any significant extent should appear – as authors of papers and reports, speakers at meetings and in public lectures, in radio and television programmes etc. Due credit should also be given to other people who took part in the project, for instance informants who contributed traditional knowledge. It is to be recommended that the right to publish results should be discussed beforehand and laid down in writing. Any conditions laid down by the funding agency will also have to be taken into consideration.

The results of research on some topics may have a considerable potential commercial value. Again, the legal rights of all partners to the expected results should be discussed, and preferably recorded in writing, as far as possible before the research is done. International law (e.g. concerning patent rights) and the national regulations of the host country must be considered.

Checklist

- Will all the partners be appropriately considered when the results of the research are published?
- Who will make the decisions about joint publications?
- Who will be shown drafts etc. before publication?
- Have binding agreements been made about the rights of all partners in case the results prove to be of potential commercial value?
 - If so, what?
- Who should be allowed to use the economically valuable results, and under what conditions?

10th Principle:

Increase research capacity

Overall aim

In addition to the hoped-for results of the research activities, the chief concern when research partnerships are formed is to strengthen the total capacity of all those involved for doing effective research, both on the individual and on the institutional level³¹. In this process, the different personal and institutional backgrounds and possibilities must be taken into account³².

Something that is particularly to be promoted is research partnership between developing countries («South-South» collaboration). In such partnerships the partners may well share a similar background to their research activities, and suffer from similar problems. The need for South-South cooperation has been explicitly expressed by representatives of countries that are not yet industrialised and those that are in the process of industrialisation. As was said in the foreword, there is a strong commitment on the part of many scientists from the «South» to work together to raise their achievements in research to the level of those in industrialised countries³³. The latter should do all they can to support them in their efforts, especially where the essential support of their own governments is missing.

Practical suggestions

For the participating research workers, a stay in another country as a guest or for further education and training can offer an opportunity to gather valuable experience, learn new methods, exchange information and make new contacts. Even the provision of names and addresses can be a valuable service, since the partners from industrialised countries often have more complete information.

Formal support for institutions, with agreements, contracts of cooperation, management advice etc., and also help with the extension of their infrastructure, can also contribute to increasing the attractiveness of «developing countries» as sites for doing research.

Checklist

- Is it to be expected that the planned collaborative research activity will contribute to increasing the scientific capacity of all the partners?
 - If «yes», what are the benefits for the research workers involved and their institutions?
 - What importance has the research project for the development of that field in the country itself?
- Are there plans for the exchange of partners for further training?
 - If so, who? When? For how long?
- Which concrete support measures are foreseen with the aim of strengthening collaboration among developing countries?
 - Creating new contacts
 - Promoting the exchange of information
 - Organisation of meetings
 - Planning and carrying out common research projects
 - Financial support
 - Others (which?)

11th Principle:

³¹ «Capacity building» means the improvement of the competence of an individual research worker or of a group in various areas (technical, scientific, management etc). «Institution building» is the creating of new institutions or the support of existing ones (Universities, Institutes, Research Centres etc.) in all areas (political, administrative, financial, personal). – See also Wils, F., 1995: Building up and strengthening research capacity in Southern countries. RAWOO Publications no. 9 (48 pages).

³² Bhagavan, M.R., 1992: The SAREC Model: Institutional cooperation and the strengthening of national research capacity in developing countries. Stockholm: SAREC.

³³ TWAS, see footnote 5

Build on the achievements

Overall aim

The new knowledge and insights that have been obtained as a result of the joint efforts of all the partners must not be lost when the project comes to an end. If this happens, all the investment of energy, time and money will be wasted. If a project is successful there should be at least three valuable outcomes: new knowledge, a contribution to sustainable development, and new or more highly developed research capacities. This last is particularly important.

The new knowledge will be recorded in publications (Principles 7 and 9). Making a contribution to development means that the new knowledge must be applied in practice in a sustainable way (Principle 8). If newly-developed research capacity is to be maintained two things are needed. Existing institutions must continue to thrive, or new ones must be founded, and the people who worked in the project must be able to find suitable jobs under acceptable conditions.

Even in industrialised countries, institutions often have difficulty in offering their employees appropriate jobs when they return from a project in a developing country. The partners from developing countries are confronted with much more intractable problems from the point of view of employment, or even concerning the continued existence of their institutions, once the collaborative research is finished. It can then happen that for good scientists from developing countries, the temptation to leave and move to an industrialised country where the job prospects are more promising becomes too great («brain drain»). Others find themselves forced to take on unskilled work, or work not commensurate with their qualifications, in order to earn a living.

Practical suggestions

The key question is how far world-wide research is perceived as an important and urgent activity. The respect paid to research in developing countries needs to be increased – but this respect has to be earned, with recognisable achievements and good public information. Only then is there a hope that research institutions will be given more private and State support, and those who work in them will be better paid. In these efforts the institutions of the developing countries need support.

Above all, partners and their institutions must not simply be left to themselves after the joint project has been completed, but as far as possible there should be frequent personal contacts and a lively exchange of information (e.g. with joint seminars, lectures etc.). Overcoming intellectual isolation is an important contribution (and a moral obligation) that can help to prevent the emigration of the most competent scientists from developing countries. Contact with the international scientific community is of prime importance.

Measures aimed specifically at helping to ensure that the partners find further professional (scientific) employment must be considered. One such measure is to help them in obtaining mandates to do research in their own country on behalf of international organisations, NGOs etc.³⁴. Efforts need to be made to give further help (financial, advisory etc.) to partner-institutions to help them to continue to function effectively – perhaps even to help them to expand.

Checklist

- Will the results obtained be used, in an appropriate form, to increase the general awareness of the importance of research in developing countries?
 - If «yes», how?

³⁴ In this context, the activities of the 'International Foundation for Science' (IFS, Stockholm) are particularly successful (see IFS-Home-Page: <http://ifs.se>)

- Are provisions being made, and support given, to ensure that partners from developing countries who have received training will be further employed in their professions when the joint project is over?
 - If «yes», what?
- Can it be expected that the research effort as a whole will contribute to reducing the emigration of scientists from developing countries?
 - If «yes», what is the justification for this hope?
- Are measures foreseen which will strengthen the partner institutions in the developing countries after the completion of the joint project?
 - If «yes», which?
- Have preparations been made to enable the research to be continued after the end of the joint project, if necessary – even if it has to be done by one of the partners alone?

Appendix

1. Case studies

The following case-studies illustrate some of the «Principles» discussed above. The projects described fit very largely – if not in every part – into the pattern of research in partnership that the «Principles» are aiming at.

1.1 The Prosopis Project in Peru³⁵

Starting-point

The project is concerned with drought-resistant trees called «Algarrobo» (the name is used for *Prosopis pallida* and *P. juliflora*, leguminous mimosa species), which are native to Peru. The project was started as a result of the «El Niño Phenomenon» in late 1982 / early 1983. On the one hand, the rains caused disastrous damage. On the other, they brought about the spontaneous reforestation of wide areas that had been reduced to desert by uncontrolled clearing, with Algarrobo and Sapote (*Capparis angulata*).

First research activities

In a first phase (pilot project 1984-1993) the Physics Laboratory of the University of Piura (UDEP) undertook an investigation of the El Niño phenomenon, which – according to all the indications – is becoming more frequent. The project involved collaboration with other organisations, some from other countries (National Oceanic and Atmospheric Administration, NOAA, USA; Instituto Geofísico del Perú; University of Colorado at Boulder, USA). In parallel to this, the Instituto de Hidráulica e Hidrología (UDEP) started a reforestation experiment on the university campus by sowing *Prosopis* seeds.

At the same time, the Chemistry Laboratory of the University of Piura, in collaboration with the Institute for Food Science of the ETH (Eidgenössische Technische Hochschule; Swiss Federal Institute of Technology) in Zürich, started an investigation of the chemical composition and nutritive value of the Algarrobo fruit. In addition to these studies, various «new» food products based on *Prosopis* were developed.

Research Projects 1994-1997

In the second phase, the Instituto de Hidráulica e Hidrología (UDEP), together with the Léman Foundation (FdL, an NGO from Geneva) and the Association for Cultural, Technical and Educational Exchange (ACTEC, an NGO from Brussels) applied to the European Union (EU) for funding for a project entitled «Extensive reforestation with Algarrobo (*Prosopis*) in arid zones of northern Peru». Through this project a «Laboratorio de Semillas» was set up, which continued the work done in the pilot phase on the multi-step germination process of the Algarrobo seeds. In addition, a pre-germination treatment procedure was developed, and also a protective coating for the seeds made of powdered sand. When a more extensive experiment with planting was started in nearby Paraíso, a locally active NGO (MIHRAS-Peru) was asked to collaborate in working out ways of protecting the young trees from damage due to grazing etc.

The collaboration was then extended to include further NGOs. In a number of districts of the Piura region they functioned as «drive belts» linking the University and the local communities. Different groups in the community were encouraged to work with the project. They were supported in putting their own initiatives into practice, and given the necessary training. The details of the collaborations depended on the local situation: whether the people concerned had lived in the area for generations or were «El Niño refugees», and how many trees still survived in their area. The projects promoted included setting up small businesses to process and sell products from the Algarrobo tree, small-animal farming and breeding, the production of honey, compost production, vegetable-growing, the better use of water, and the building of houses, settlements and schools.

³⁵ See also Circular no. 49 of ATSAF (Arbeitsgemeinschaft für Tropische und Subtropische Agrarforschung e.V.; (Working Group for Research in tropical and subtropical agriculture). Ellerstrasse 50, D-53119 Bonn

The preparatory work carried out in the Chemistry Laboratory resulted in the submission to the European Union (EU) (in the framework of the STD3-Programme) of a project proposal entitled, «New food products from *Prosopis* fruits as a basis for reforestation and the prevention of desertification in Latin America». The project was approved by the EU Commission. The partner-institutions are the Instituto del Frío (CSIC, Spain), the Compañía general del Algarrobo (Spain), the University of Edinburgh (Scotland), the Centro de Investigaciones y Estudios Avanzados (CINVESTAV, Mexico), and the Institute of Food Science of the ETH, Zürich. Studies are in progress on the production and marketing of coffee-substitutes, dehydrated fruit-pulp, sweetening agents and various food additives, as well as medicaments.

Funding

The NGOs mainly finance their activities themselves. The EU makes a substantial contribution to the projects (80% of the total cost of about 750,000 Swiss francs), and in both projects (extensive reforestation, new food products) there is Swiss participation. In the first project the total cost is covered by the SDC (5%), the Fondation du Léman (10%) and the University of Piura (5%). This was decisive for obtaining the EU grant. In the second project the financial contribution of the Swiss partners is made through the Federal Office for Education and Science (FOES), and includes support for a Peruvian scientist working for a PhD in Food Chemistry at the ETH in Zürich.

The *Prosopis* Project in the light of the Principles of Partnership

- The project combines basic research (El Niño, *Prosopis*, environment) with research oriented towards concrete goals (reforestation; the development and marketing of new or improved products).
- It is leading to practical application of the results obtained and the experience gained, which should result in the sustainable development of degraded but potentially fertile land, for the benefit of the local population.
- It is interdisciplinary. Natural scientists, chemical engineers, food scientists, economists and sociologists are all working together.
- It has been set up on a long-term basis.
- It has implications for the whole region.
- It is based on a wide network of international cooperation, which includes South-South partnerships.
- At least in some areas, it is contributing to the further development of research capacity in Peru.
- Thus, in many important ways, the project embodies essential ideas underlying research partnership.

However, at the time of writing (October 1997) there are some aspects of the project that should be examined in the light of the principles elaborated in these Guidelines. These include: the research goals for the next few years; the possibility of an increased international exchange of research workers; more publications that will reach the scientific community, and the preparations for the planned evaluation of the project, including its socioeconomic aspects. (A sum of 41,000 Swiss francs has already been allocated for the technical and scientific evaluation of the wooded area and follow-up over a period of 2 years.)

1.2 Meningitis in northern Ghana

Situation

In the dry season in the early months of 1997 there was an epidemic of meningitis in Northern Ghana. Owing to the lack of appropriate laboratory facilities, it was not possible to make a precise identification of the causative organism. Northern Ghana is part of the so-called «meningitis belt» in the Sahel Region. Countries in this area have suffered from meningitis epidemics approximately every ten years. Vaccines do exist against some of the possible causative agents (meningococci), which are effective in limiting epidemics, though they are not able to confer long-lasting resistance. If vaccination programmes are to be successful, it is essential to recognise the beginning of an epidemic in good time, and to identify the causative organism rapidly.

The Navrongo Health Research Centre (NHRC) in the Kassena Nankana District in Northern Ghana, run by the Ghanaian Ministry of Health, has been in existence since 1991. Its aim is to study the main health problems in Northern Ghana, and to improve the health services in collaboration with the local people and social institutions. In the framework of these activities, the NHRC maintains a demographic information system covering the whole district (Navrongo Demographic Surveillance System, NDSS). The NDSS is an integrated system of field research and data management, which registers information, for example about pregnancies, births, deaths and migration, for all the approximately 140,000 inhabitants of the District, four times a year. The NHRC has already received international recognition for a field study of the effect of vitamin A supplementation in small children, and is using the surveillance system intensively for further epidemiological studies.

Project preparation and financing

There has been contact between scientists from Navrongo and Basel for some years, and the Director of the NHRC, a Ghanaian physician, recently completed a PhD degree in the University of Basel. Building on these earlier contacts, members of the staff of the Swiss Tropical Institute (STI) were invited to Navrongo in the Spring of 1997. On the initiative of Ghanaian scientists, who realised that the expertise available in the two institutions was complementary, possibilities for long-term collaboration were discussed. At the time of the visit there was a meningitis epidemic, and it was clear that meningitis was an urgent problem, and one that was recognised as such not only by the staff of the local and national health services, but also by the local population. Therefore the NHRC and the STI agreed that one of their joint activities would be the setting up of a microbiology laboratory. It was also agreed that besides the investigation of epidemic meningitis, a second line of research would be a longer-term study of acute respiratory infections. These are one of the most important causes of morbidity and mortality among children in this region. The plans that had been worked out jointly were presented to the local health authorities and to the national Ministry of Health. A number of Ghanaian institutions that are concerned with infectious diseases were informed and invited to collaborate.

In the preparatory phase it was necessary first of all to ensure that, if the epidemic flared up again in the dry season in early 1998, the expert personnel and the necessary equipment and infrastructure would be in place to isolate and identify the causative organism. A great deal of support was given by the Basel pharmaceutical industry, which (as a result of restructuring within the industry) was able to donate a large amount of used equipment. Most of the more expensive items were obtained in this way. The «Seed Money Fund» of the Swiss Tropical Institute, which gives short-term grants for innovative projects, covered the costs for a Swiss doctoral student and for the first phase of the project. The Ghanaian Ministry of Health financed the appointment of a Ghanaian laboratory technician and an experienced Ghanaian physician. The job-descriptions of both these members of staff included work in the War Memorial Hospital in Navrongo – the only hospital in the district – as well as on the project. The Swiss PhD student spent some time in Autumn 1997 at the Max Planck Institute for molecular genetics (MPI) learning the microbiological techniques necessary for the field work. In January

1998 he went to Ghana and set up the laboratory, together with the two Ghanaian team members. At the same time, the project team systematically built up contacts with the hospital, the three peripheral health facilities in the district and the local health authorities, as well as the staff of the NHRC.

First phase of the project

As expected, the first cases of meningitis occurred in February 1998. The permanent e-mail contact between Navrongo and the STI and the MPI was of decisive importance in this phase for detailed planning, and for solving technical problems. As the number of cases of meningitis rose sharply in the next months, the team in Navrongo was strengthened by a microbiologist and an epidemiologist from the STI, and an expert on the molecular epidemiology of infectious diseases from the MPI. The Ghanaian physician trained the staff of the Health Centres in the use of new techniques, and advised them on diagnostic and therapeutic questions. The local Health Authority provided the services of a messenger with a motorcycle, to ensure the rapid transport of samples of cerebrospinal fluid (CSF) from patients to the hospital. It was thus possible to check the diagnoses of «bacterial meningitis» made in all the health facilities in the District, in the laboratory. This was welcomed by all those involved in the health services, and seen as a great help and a step forward. On the basis of the microbiological examinations carried out on the spot, the local Health Authorities could be provided with the information needed to assess the situation and make decisions on future vaccination strategies. A considerable number of isolated organisms which could not easily be typed were sent to Europe and analysed using molecular-genetic techniques. These results provided important information about meningitis cases due to other bacteria. A systematic scientific study of the epidemic was begun, using the resources of the NDSS to investigate the spatial and temporal distribution of cases in 1997 and 1998. Longer-term research projects have been started which should help to recognise meningitis epidemics sooner, to predict their occurrence, and to look at outbreaks in other districts.

In the course of the investigation, the project team found that the local population and the local and national Health Authorities were very open. It was important that there was widespread awareness of the problem and concern about the meningitis epidemic, and it was also important that the NHRC had been working together with the community members for many years on the improvement of the health services. As the research progressed, the training activities of the Ghanaian team members in the hospital and the laboratory led to a direct improvement in the care provided by the health services. This is a result that should be clearly visible to the local community.

The second project phase (future plans)

In the summer of 1998, once the rainy season had started and the meningitis epidemic was over, the Swiss research student and the Ghanaian physician involved in the project, who is also writing a PhD in the University of Basel, came to the STI for a stay of some months. (The Ghanaian student is supported by a scholarship from the Canton of Basel for further education for students from developing countries.) The visit to Basel gives them an opportunity to discuss the work with experts, to carry out further analyses on the samples that were collected, to make concrete proposals for the next stages of the work, and to start on the writing-up of the results for publication in scientific periodicals. The results will also be made known in Ghana in a suitable form.

The successful collaboration will be expanded. In the next phase of field work, the methods developed, the infrastructure, and the network of contacts that has been built up, will be used additionally for the investigation of acute respiratory infections. The further stages of the work will include the local medical institutions, and additional members of the staffs of the STI and the NHRC who are concerned with epidemiological and sociological questions. Furthermore, scientists inside and outside Ghana will be invited to make suggestions for further projects, and to share in exploiting the possibilities offered by the linking of the NDSS with laboratory facilities. Grant applications to various institutions (the SNF, the EU, Foundations) should enable the projects to be financed by outside funding. In conclusion, the NHRC and the STI are aiming

at ensuring that the research capacity now available will remain firmly established on a long-term basis. In view of the global character of the meningitis epidemic a start is being made on coordinating the activities of the project with a partner organisation in Pakistan.

1.3 The Lake Victoria Project: implementation of a local Agenda 21

Starting situation

A series of research projects in partnership was set up in 1994 in the framework of Module 7 (Development and Environment) of the Priority Programme Environment (PPE) of the Swiss National Science Foundation (SNSF). Half the finance came from the SNSF, for the support of Swiss scientists, and half from the Swiss Agency for Development and Cooperation (SDC), for the support of the Southern partner.

One of these projects addresses the question of how far the urban development of the city of Jinja, on the shores of Lake Victoria, is compatible with the sustainable use of the water resources. Lake Victoria is Africa's largest lake, bordering on three countries; Uganda, Tanzania and Kenya. Over the last decades the rapid growth of the population, and largely uncontrolled industrialisation, have had extremely deleterious effects on the water quality. The increase of nutrients has led to the development of gigantic floating carpets of water hyacinth, which interfere increasingly with fishing. At the same time – not least as a result of toxic waste – numerous species of plants and animals on the shores and in the lake have died out or are in danger of extinction. These developments threaten the livelihood of the people living around the lake, especially the fishermen.

International and interdisciplinary collaboration

In this complex environment, a project was started in 1994 to make a scientific study of the utilisation of the water resources – especially the marshes around the city of Jinja. The aim was to develop ways of making the best possible use of the marshes as an important step in the biological purification of the wastewater from the city, without endangering the continued existence of the marshland or eliminating its traditional utilisation. The partners involved on the Swiss side were the Institute for Plant Biology and the Ethnological Seminar of the University of Zürich, together with the Swiss Federal Institute for Environmental Science and Technology (EAWAG, Dübendorf) and a technical college in Basel (Fachhochschule beider Basel, FHBB, MuttENZ). The African partners were scientists from the Fisheries Research Institute (FIRI), together with faculties and institutes of natural sciences, social sciences and law in the University of Makerere in Kampala, Uganda. Most of the scientific work was done by local scientists and students of the universities concerned, which in their turn were in close contact with sister-organisations in Tanzania and Kenya. This made a significant contribution to the building of research capacity, the development of networks and the exchange of experience among Southern partners.

In connection with national and local government bodies, the interdisciplinary research team developed structures and methods for the participatory implementation of a policy of environmental protection at the local level. The traditional utilisation of natural resources was an important consideration – especially the role of the women. They collect plants from the marshes for many purposes, including medicinal ones, and are engaged in shifting cultivation. These activities have given them a large amount of valuable knowledge about the ecology of this rich habitat. On the basis of their ways of using the marshlands, and traditional law, the research team developed a structure of partnership between government bodies, the women who use the marshlands, industry and those responsible for water supplies. The plan has been put into action in Jinja, and has meanwhile become a model for participatory environmental management around Lake Victoria.

Those who are affected play an active part

Essentially, it is a matter of helping Jinja – Uganda's second largest city – to put «Agenda 21» into practice. On the basis of the previous research activities, trust has successfully been built up between the representatives of various interests, so that they were willing to meet around a table to look together for appropriate solutions – something which could by no means be

taken for granted, considering how disparate their interests are. In addition, the project is part of the «National Wetlands Management Programme», which follows the policies of the «National Environmental Action Plan» (NEAP). This shows how well the research activities are anchored in the administration, from the local to the national level. The further fact that a «Lake Victoria Environment Management Programme» exists (largely financed through the «Global Environmental Facilities» - GEF - of the World Bank) shows in addition how far advanced the regional cooperation is already.

Changing perceptions – better mutual understanding

As a result of personal contacts, interviews, workshops, public relations work etc. on the one hand, and the research results on the other, all those involved have begun to see the marshlands in a very different light. Whereas only a few years ago these marginal areas were regarded as useless, today everybody is convinced that for Jinja, the marshes play a prominent – indeed, a vital – role. Thanks to their action as a filter they contribute decisively to the purification of waste-water, they produce valuable raw materials and in addition are the home of a wide variety of plants and animals.

Local initiatives

It is impressive that, as a result of the varied activities of the project, a women's group has been founded with about 500 landless women. They have learnt to exploit the marshes in a more sustainable way, and even the authorities are willing to discuss a leaseholding system to establishing a new basis for their use of the marshes. The city has provided the women with a stall in the market where they can sell their produce – hats, baskets and mats woven from natural fibres, as well as food and medicinal herbs. This is an important motivation for everyone!

This shows how research has led to concrete activities, and can thus become visible and perceptible to the local community.

A growing circle is interested

Meanwhile, as a result of various functions and meetings, the project has begun to interest more and more organisations. In particular the United Nations Development Programme (UNDP) in the framework of the «World Bank Water and Sanitation Programme»; the United Nations Centre for Human Settlements (Habitat) and the «Network for Water and Sanitation International» (NETWAS) have said they are interested in the project's activities. The success of the project, and the way it has developed, raise hopes that it will be possible to repeat it in other cities around Lake Victoria. This would be a big step towards the implementation of «Agenda 21» on the regional level.

2. Snags and difficulties frequently encountered in research partnerships between developing and industrialised countries.

The following is intended to pinpoint a few of the challenges and problems frequently faced by research projects that involve partners from both industrialised and developing countries. It is based on the experience of the authors and the comments of colleagues, and makes no claim to completeness³⁶.

The work-plan

If there is no clear work-plan, or «Study protocol», or if the plans are not sufficiently precise, it is very easy for misunderstandings to arise, resulting in bad feeling between the partners. It is recommended that the partners should work together to prepare a plan, which should be as precise and detailed as possible, and should be written down. This study protocol should include the research question, the aim, the working hypotheses, the methods to be used (including the methods for continuous evaluation of how the work is progressing), the way in which the resources are to be used, the tasks and responsibilities of all those involved, and an outline timetable.

Permits

Official Research Permits – sometimes several – are often required before a project can start (this may apply to research in one's own country or in another, and not only in developing countries). The time it will take to obtain these is very often underestimated, and this can lead to severe problems with the time available and the research timetable.

In addition to Research Permits, a project must often be approved on ethical grounds. Ethical criteria may be laid down in both national and international law. Ethical approval may also be required for the collection of socio-economic data, for example through questionnaires or group discussion.

Agreements

Permission to carry out research may be easier to obtain in countries with which Switzerland already has an official agreement defining a framework for scientific cooperation. Such agreements must be set up through diplomatic channels. Experience has shown that they are easier to achieve if positive experience is already available.

Balance between the partners

If the partners are very different in size, this can lead to problems. For one partner the collaborative research project may be a major activity, but for the other only one concern among many. It is important in setting up partnerships to look carefully at the relative sizes of the proposed partners in terms of number of staff, budget, etc.

Cultural differences

When people with different cultural backgrounds embark on a joint project, especially in an environment that is unfamiliar to at least some of them, they are faced with an unusual challenge. Before they can really have access to the setting in which the research is being carried out they will need to become familiar with new languages, and must make the necessary effort to get to know the culture.

Psychological stress

There are many things in a partnership project that can cause stress. A scientist may be working in a totally different environment («culture shock»), possibly in an isolated situation. It takes time and considerable effort to develop confidence between the partners. Geographical separation, and the frequent absence of reliable means of communication, add to the problems.

³⁶ Further examples and suggestions on the basis of experience will be very welcome.
(E-mail: kfpe@sanw.unibe.ch)

How much a given individual is affected by these factors will depend on his or her individual character, and on how serious the problems are. Persistence, flexibility and the ability to stand strain are important. Occasional visits to the home country to discuss the work, participation in international conferences, and regular periods of leave can reduce the strain.

Financial problems

Budget planning must be done with the utmost care. Miscalculations can result, for example, from not working out the research plan carefully, from not taking the incidental costs sufficiently seriously, or from unexpected changes in external factors.

Incidental costs are very varied in nature. They include journeys needed to prepare the project, participation in scientific events (workshops, lectures etc), visits between partners, communication, monitoring and evaluation. Funds are also needed for publications – including those for the general public – and for preparing and initiating the application of the results of the study. Such expenditures always have to be very well justified – donors are often reluctant to allocate funds for such purposes.

Changes in external factors, like major changes in the exchange rate, can happen unexpectedly rapidly. Funding for a project is often agreed on the basis of a fixed sum in Swiss francs, or in US dollars calculated on the basis of an average exchange rate. This may prove to be either an advantage or a disadvantage for a project, depending on the direction in which the exchange rates change during the period of the project. High levels of inflation or deflation of the local currency in the partner-country can lead to unexpected difficulties. If there is a high risk of this happening, it may be advisable to agree, and record in writing, that all the agreed financial contributions (e.g. salaries of employees, local administrative costs etc.) may be adjusted if there are changes in exchange rates.

Termination of the cooperation earlier than was planned

Sometimes a collaborative project has to be broken off for a time, or terminated sooner than expected, for financial, political or other reasons. It is a good idea to discuss this possibility beforehand, and prepare a plan of action in writing, so that if the situation does arise, the winding-up of the project can be done in a way that is acceptable to all parties and causes as few problems as possible.

Appendix 3: The Charter of North-South Partners

(The following is quoted from the paper by Jacques F. Gaillard, 1994: *North-South Research Partnership: Is Collaboration Possible between Unequal Partners?* Knowledge and Policy, 7/2, p. 58)

- The collaboration should be based on a strong mutual interest and both parties should have something to gain from it.
- Project proposals should, whenever possible, be drafted jointly and each partner should be associated as much as possible to the important decisions which need to be taken.
- In particular decision on specific instrument purchase should be made jointly and the necessary provision for installation, maintenance and repair should be secured.
- Provision should be made in the budget for a training component and research training should, whenever possible, take place as part of a formal degree program to increase commitment.
- Salaries should be sufficient to ensure a full-time commitment, or completed by supplementary means (e.g. research honorarium) secured in the budget.
- Transparency should be a golden rule between the partners, e.g. both sides have information on the budget allocations to each side and how funds are being spent.
- Each cooperating group should include a substantial number of researchers (at least 3).
- Both parties should meet regularly to review ongoing work and plan future activities.
- Communication channels (e.g. fax and E-mail) must be available to secure efficient interaction between partners.
- Scientific papers should be written jointly, with the names of the authors from both sides appearing on the published articles.
- Collaborative programs should be evaluated on a regular basis, e.g., after each phase is completed. Monitoring should emphasise project outputs, rather than inputs.
- Mechanisms should be established so that the collaboration can continue after the collaborative program is terminated to ensure a long lifetime to the collaborative partnership.

Epilogue

A draft version of these «Guidelines» has been widely circulated among colleagues both in Switzerland and abroad, so that they could offer their comments, criticism and advice. We were happy to see how many people replied, and we should like to thank them all here. On the whole, the comments were encouraging. Wherever it seemed appropriate, we have taken them into consideration in this final version. However, there were a few fundamental criticisms and questions that could not be worked into the existing text. We shall therefore discuss them as far as possible here.

One commentator raised some fundamental questions about the basic idea of promoting research in developing countries. For him, it is an important principle that «Poor countries do not deserve poor science» – and that doing good scientific research, especially research on basic questions, is becoming increasingly complex and difficult even in industrialised countries. But even when scientific quality is assured, the benefits of research are unpredictable, and not necessarily related to the project's goals. Investment in research that cannot be guaranteed to provide results that will be useful in practice within a reasonable period can be very high compared with the benefits, and it would be irresponsible for developing countries to invest resources in this way. Concentration on research also has other problematic results. One result of improving the training and qualifications of research workers is that they are in a position to become internationally mobile, and the resulting «brain drain» may result in a reduction rather than a strengthening of research capacity³⁷. Apart from that, there is often an internal «brain drain», which draws well-qualified people away from their existing jobs in services or administration, where they have more urgent tasks to carry out. This argument deserves to be taken seriously, and we can sympathise with it – but it is up to each individual country to decide what its priorities are.

Several of those who sent suggestions felt that there should be some legitimation of this document, and for a statement about how authoritative it can claim to be. One asked for justification of the proposed method of doing research. Another said that the 11 principles in the «Guidelines» should be self-evident. Our answer is that the authors based their work on the one hand on what they have observed in their own experience of research in partnership with developing countries over the past decades, and on the other hand on statements by representatives of developing countries, for example at the Conference on Partnership held in Bern in 1996. They did not only express a need for the strengthening of the research capacity in their own countries, but also called for a code of conduct, which scientists – particularly those from Western countries – should follow in their relationships with colleagues in developing countries.

One comment that was made repeatedly about the Guidelines was that it would be difficult to put them into practice under the conditions that exist in the «real world». Points seen as particularly difficult were the change from multidisciplinary to inter-or trans-disciplinary; the transparency demanded of all parties; the possibilities of resolving conflicts, and the attitudes of some donors. Finding jobs for newly-qualified scientists could also be a problem under some circumstances. We need to repeat what was said in the Introduction; the aims expressed for each Principle are ideals; the decision as to how far they can be lived up to in practice must be left to those actually involved in projects. The Guidelines cannot offer any kind of guarantee; they are intended purely to offer help.

The present Guidelines do not claim to provide the final word on the subject of research in partnership. The fact that they have given rise to new questions and thoughtful criticism means that they do represent another small step on the difficult path that will have to be travelled by the international scientific community as the 20th century comes to an end. All those who want to come too, with an honest purpose and looking towards the future, will be heartily welcomed.

³⁷ Gaillard J. & Meyer J.-B., 1996: Le brain-drain revisité: de l'exode au réseau. In: Les Sciences hors d'Occident au XXème siècle, 7, 331-347, ORSTOM éditions, Paris

Abbreviations

BBW/FOES	Federal Office for Education and Sciences
CASS	Conference of the Swiss Academies of Sciences
EDA	Federal Department of the Exterior
EPFL	Swiss Federal Institute of Technology, Lausanne
ETHZ	Swiss Federal Institute of Technology, Zürich
EU	European Union
IARC	International Agricultural Research Centre
IFS	International Foundation for Science
KFPE	Swiss Commission for Research Partnership with Developing Countries
NGO	Non-government organisation
RAWOO	Advisory Council for Scientific Research on Development Problems
SAS/SANW	Swiss Academy of Sciences
SAREC-SIDA	Swedish Agency for Research Cooperation with Developing Countries – Swedish International Development Cooperation Agency (SIDA)
SNSF	Swiss National Science Foundation
SDC	Swiss Agency for Development and Cooperation
TWAS	Third World Academy of Sciences, Trieste

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