

1 Initiating Research for Mitigating Syndromes of Global Change in Different Contexts

Hans Hurni, Urs Wiesmann, Pascale Anton
and Peter Messerli

Abstract

Syndromes of global change can be observed in many regions of the world. Mitigating such syndromes is a vital task for the international community and a precondition for sustainable development. Research institutions in particular need to confront the challenge of contributing to mitigation efforts. International research partnerships are one vehicle that can be employed for mutual strengthening of capacity and competence in syndrome mitigation research. In 1999 the Swiss government invited Swiss research institutions to propose a series of National Centres of Competence in Research (NCCRs) in order to strengthen Switzerland's position in the international research arena. One of the 14 finalists chosen in a competitive selection process was the "NCCR North-South". This long-term programme deals with international partnerships for development-oriented research. A preparatory project, the "Syndrome Pre-Synthesis Project" (SPSP), was initiated in 2001, and applied a transdisciplinary approach to identify development-oriented research partnerships in eight regions of the world. The present publication is the outcome of the SPSP. It addresses core problems and corresponding research needs in three major "syndrome contexts": "urban and peri-urban", "semi-arid" and "highland-lowland". Chapter 1 gives a concise introduction to the goals, the main concepts and the conceptual framework of the NCCR North-South programme and the SPSP project.

1.1 Goals, objectives and background of the publication

This book provides an overview of knowledge about the negative impacts of global and local change in selected regions of the world, based on qualitative appraisals made by multidisciplinary teams of specialists. It also outlines how research can contribute to mitigating these impacts and reinforcing positive trends in order to promote sustainable development. In particular, the book

- describes how partners from different countries and backgrounds jointly designed a research partnership programme, using a transdisciplinary approach;
- identifies and provides an overview of core problems of non-sustainable development associated with “global change” in different regions of the world;
- clusters these core problems into so-called “syndromes” and discusses the corresponding “syndrome contexts” observed in each region;
- outlines research projects that aim to mitigate these “syndromes of global change”, and
- provides a synopsis of “syndrome contexts” and core problems that will form the basis for an evaluation of the outcomes of the long-term NCCR North-South research partnership programme.

The NCCR North-South is an international research programme of the Swiss National Science Foundation (SNSF) co-funded by the SNSF, the Swiss Agency for Development and Cooperation (SDC), the Swiss institutions engaged in international research partnerships (Swiss Association of Research Partnership Institutions, SARPI) that launched the programme, and their international partners. The members of SARPI have longstanding experience in development-oriented research. The acronym “NCCR” stands for Swiss “National Centre of Competence in Research”, of which 14 were established in 2001, with potential funding for 10 to 12 years (see Box, p. 22). The aim of the NCCR “North-South” is to engage in “Research partnerships for mitigating syndromes of global change” (NCCR North-South, 2000; see Box, p. 23).

To prepare for the NCCR North-South, a further, short-term project was initiated in early 2001, the “Syndrome Pre-Synthesis Project” (SPSP, see Box, p. 26). The objectives of the SPSP were to jointly develop a conceptual and

methodological framework in preparation for the NCCR North-South, by providing the means to formulate a pre-synthesis for syndrome mitigation research through international cooperative partnerships in each region of future involvement of the NCCR North-South. The SPSP lasted from 1 March 2001 until 30 June 2002. The approach was a participatory one, involving representatives of local research institutions in the chosen regions. The project resulted in a series of pre-syntheses for assumed “syndrome contexts” in the eight regions chosen worldwide.

NCCR North-South glossary

Global change: Global-scale human, human-induced and natural changes that modify the functionality of the natural, social, economic and cultural dimensions of the Earth system.

Globalisation: Increasing interlinking of political, economic, institutional, social, cultural, technical and ecological issues at the global level.

Governance: A general conceptual framework for addressing the evolution and organising principles of governing processes in a society. It refers to the ways decisions are taken and implemented, and takes into account formal as well as informal arrangements and actors.

Marginal region/people: Region (or people) partially or completely isolated from the mainstream of development.

Mitigation research: Research that contributes to problem-solving by producing knowledge for decision support and by developing tools to enable stakeholders to initiate mitigation measures and processes and work towards sustainable development.

Region: A spatial area defined by one or more specific (e.g. political, institutional, economic, social, cultural, infrastructural, bio-physical, ecological, etc.) characteristics. Depending on how it is defined (e.g. “administrative region”, “language region”, “arid region”, “Central Asian region”), a region may cover several small (e.g. district) or large (e.g. country) administrative units.

Research approach: A set of research methodologies linked in a common structure chosen or defined by a research community, and guided by declared principles.

(continued p. 14)

NCCR North-South glossary (continued)

Research methodology: A logical set of research methods needed to implement a chosen research approach in view of achieving a pre-defined research goal.

Research partnership: Inter-institutional or interpersonal collaborative alliance in a research programme involving international and multicultural partners, and guided by a set of principles (as defined by KFPE, 1998, see Box, p. 19).

Sustainable development: Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs (WCED, 1987, so-called “Brundtland Report”).

Syndrome context: A region (see above) or circumstances in which one or more syndromes of global change actually occur, or may potentially emerge.

Syndrome mitigation: Measures taken by individuals or institutions in one or more areas of intervention, which help reduce the effects of single, or combinations of several core problems, thereby actually or potentially reducing negative impacts of global change, and contributing to sustainable development.

Syndromes of global change: Clusters of ecological, social, economic, etc. problems or symptoms that form typical patterns, are based on similar processes and emerge in different regions of the world, thereby actually or potentially resulting in adverse impacts at the global level (WBGU, 1997, as modified by the NCCR North-South).

Transdisciplinarity: A new form of learning and problem-solving involving cooperation among different parts of society and academia in order to meet complex social challenges (according to Häberli et al., 2001).

Transdisciplinary research: Research that integrates the social and natural sciences in a common approach, and includes non-scientific knowledge systems in a participatory and interactive process to improve societal practices.

1.2 Syndromes of global change

The point of departure for this book is the assumption that developing and transition countries (the “South”) are affected by a multitude of environmental, political, economic, socio-cultural and technical development problems and disparities. These problems occur in many different contexts, and their frequency and acuteness have accelerated tremendously in the 20th century. They do not occur independently: they are closely interrelated and appear in specific combinations or clusters, depending on concrete situations. Such clusters of problems can be referred to as “syndromes of global change”, a term borrowed from the German Advisory Council on Global Change (WBGU, 1997). While in Switzerland, parts of Europe, the US and other countries of the “North”, climate change has commonly been perceived as the most important core problem of global change, the assumption here is that syndromes of global change are clusters of more than one core problem, and that a number of such syndromes exist that have not been adequately studied so far.

Among the prominent syndromes addressed by WBGU (1997) are the “Sahel Syndrome”, i.e. the process of desertification due to agricultural over-utilisation of semi-arid lands in a weak economic environment; or the “Favela Syndrome”, which refers to spontaneous and rapid peri-urban expansion without adequate development (WBGU, 1997). Although many syndromes of global change are found in developing and transition countries, they may be caused by processes induced by the industrialised world. Moreover, in these countries, many core problems are further aggravated by prevailing poverty, as well as by economic and institutional weakness. Syndromes of global change affect the majority of the world’s population. Hence, top priority must be given to focusing on developing and transition countries, as these countries have only minimal means of their own to find sustainable solutions through research and implementation of programmes. This requirement was widely confirmed at the World Conference on Science held in Budapest from 26 June to 1 July 1999.

Analysis and appraisal of syndromes, and designing of mitigation strategies, require an integrated scientific approach. Most importantly, in order to ensure the acceptability of solutions, broad participation by stakeholders is necessary – and hence, a transdisciplinary perspective and methodology. The “syndrome concept” (*Syndromkonzept*) developed by Petschel-Held et al. (1995) and WBGU (1997) provides a conceptual framework that allows

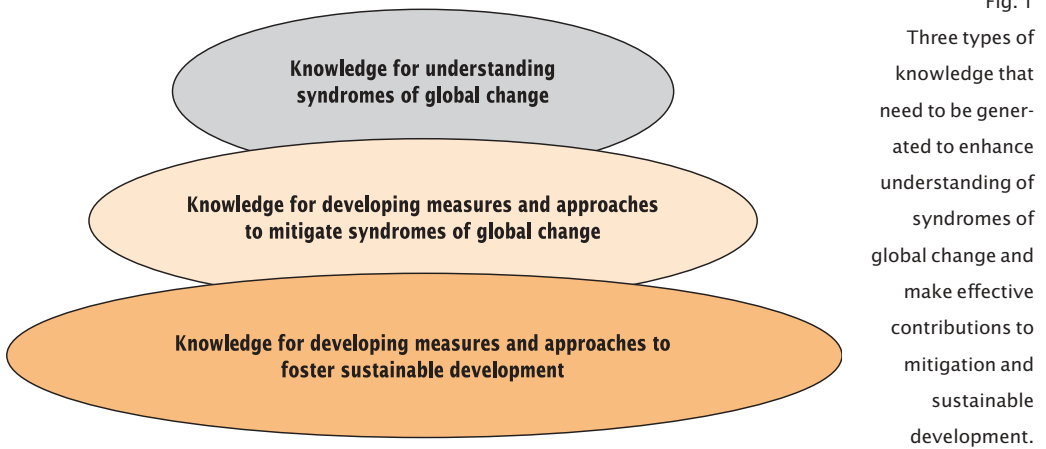
topical integration as well as global differentiation. To achieve such differentiation, WBGU (1997) proposed and discussed 16 syndromes of global change, 7 of which were highly relevant for developing and transition countries. Recent studies and discussions of the syndrome concept underline its potential and at the same time illustrate that this potential has not yet been fully exploited (cf. Petschel-Held et al., 2000). There is a need to further refine the approach and methodology, as well as to review the first selection of syndromes and the corresponding symptoms proposed by WBGU (1997) and adapted by all following authors, especially Schellnhuber et al. (1997) and Reusswig (1999).

A major critique of the syndrome concept is that it focuses on negative aspects of development, neglecting the innovations, potentials and opportunities for sustainable development that exist at all levels, in various contexts and involving different stakeholders. A further critique is that the syndrome concept leads to an approach that analyses the causes and consequences of syndromes, but does not assist in finding ways of mitigating problems; hence that this approach is purely analytical compared to more solution-oriented approaches. Within the context of the present publication and the research programmes involved, the syndrome concept is therefore not the only conceptual framework for research; it is one component of the research framework of the NCCR North-South, providing the basis for identification and justification of the research projects to be formulated.

1.3 Research approach required for syndrome mitigation

Understanding of the cumulative global effects of global and local change that are likely to affect societies worldwide requires knowledge of a multitude of factors: there is a need to explore causes and effects, processes and dynamics, as well as existing changes and trends. In addition, it is necessary to reflect in depth on how political, social, economic, bio-physical and other negative impacts of global change can be mitigated, and to involve all social groups in the South as well as the North in this cognitive process. Knowledge gained in this manner is related to concrete development measures. Finally, a third type of knowledge is necessary: potentials and innovations that can lead to sustainable development must be explored and understood. These different types of knowledge must be guided by ethical considerations, a reflection on and integration of normative values, and the active participa-

tion of actors, researchers and stakeholders in local to international research and development programmes that aim for more equity and justice at the intra- and intergenerational, and intra- and interregional levels. Given the complexity of syndromes of global change and of the types of knowledge needed to understand and mitigate them (see Fig. 1), multi-level and multi-stakeholder approaches (see Hurni, 1998) appear to be the most appropriate for research on existing and potential options for mitigating and eventually overcoming such syndromes. Hence they are the key elements of the research programme described here.



The basic assumption that syndromes of global change consist of problems clustered in characteristic patterns implies that strategies for syndrome mitigation (for a definition, see Box, p. 14) cannot be developed by focusing only on single problems, actor categories, levels of intervention, institutions, or policies. A research approach is needed that addresses the clustering of development problems and their interrelations in an integrated way.

Research on and for mitigating syndromes of global change (“mitigation research”) is a relatively new field of science. It can be defined as “research that contributes to problem-solving by producing knowledge for decision support and by developing tools to enable stakeholders to initiate mitigation measures and processes and work towards sustainable development” (see Box, p. 13). The research programme initiated by the NCCR North-South does not restrict its focus to individual, locally-bound syndromes of global

change, but concentrates on “syndrome contexts” that are globally, regionally and locally relevant “hot spots” of non-sustainable development. In each context chosen for study, the definition of syndromes and the selection of symptoms and interactions are reviewed and refined in a participatory process, and mitigation research is carried out through transdisciplinary, interdisciplinary and disciplinary methods.

1.4 International research partnerships

There are very great disparities between research capacity in developed countries and capacity in developing and transition countries. According to KFPE (2001), only about 15 percent of all the resources devoted to research throughout the world are currently being invested in developing and transition countries. Of this 15 percent, India, China and the newly industrialised countries of East Asia account for two thirds, which means that the rest of the developing world accounts for only 4–5 percent of global research resources (UNESCO, 1996). If we take the number of researchers per million inhabitants of a region as an indicator, Africa, with only about 70, has by far the smallest number. The Middle East and India have about 130 researchers per one million inhabitants, the rest of Asia around 340, and Latin America about 550. By contrast, Europe has about 1900 researchers per million inhabitants, and North America about 3640. Japan, Australia and New Zealand have the highest ratios, with about 4380 (Waardenburg, 1999). The density among the latter group is thus almost 63 times greater than in Africa. In addition, researchers in the North can count on higher funding, i.e. they have much better salaries, better equipment, enhanced communication tools and hence a greater potential to be productive (Hurni et al., 2001). In terms of overall budgets, research inequities are thus even much more pronounced than indicated by mere statistics on density.

Among the various forms of research cooperation that aim to strengthen research capacity in developing and transition countries, there are some promising approaches, such as demand-driven research for development (Wolffers, 2000) and, in particular, international research partnerships as defined by the Swiss Commission for Research Partnerships with Developing Countries (KFPE) (KFPE, 1998). Such partnerships have attracted increasing attention and are now considered to be among the most egalitarian forms of research cooperation, offering mutual advantages to multiple stakeholders in the South and the North (KFPE, 2001). In order to help

researchers and funding institutions to set up equitable international research partnerships involving partners in the North and the South, KFPE, established in 1994, developed guidelines aiming to improve international cooperation in research (see Box).

The 11 Principles of Research Partnerships

1. Decide on objectives together
2. Build mutual trust
3. Share information; develop networks
4. Share responsibility
5. Create transparency
6. Monitor and evaluate collaboration
7. Disseminate results
8. Apply results
9. Share profits equitably
10. Increase research capacity
11. Build on achievements

Source:
KFPE, 1998

1.5 The contexts of syndromes of global change

The Swiss institutions engaged in research partnerships that collaborated to jointly pursue long-term syndrome mitigation research have extensive competence but only limited capacity. They therefore decided to focus on only a few, selected syndromes or typical clusters of problems related to global change, and identified their occurrence in the following three major “syndrome contexts” (see Table 1, p. 20):

- urban and peri-urban;
- semi-arid;
- highland-lowland.

In the urban and peri-urban syndrome context, the speed and degree of urbanisation have long been perceived as a key problem in developing countries, e.g. at the Habitat I conference in 1976. Economic, social and infrastructure problems of metropolisation (Fuchs et al., 1994; Bolay, 1995), and

solving or mitigating such problems through urban planning and infrastructure development (UNCHS, 1996), have been the main focus of research and development cooperation. In the 1990s political attention turned to the broader concept of “sustainable urban development” that was, for example, the core of the Habitat II conference in Istanbul in 1996 (UNCHS, 1996). In spearheading this development, research expanded beyond the traditional focus on processes of metropolisation and their reflection in spatial and socio-economic structures, towards development-oriented action research.

Table 1

NCCR North-South syndrome contexts, and assumed acuteness of syndromes in each context in the “Joint Areas of Case Studies” (JACS).

Syndrome context	Urban and peri-urban	Semi-arid	Highland-lowland
Location of the NCCR North-South “Joint Areas of Case Studies” (JACS)	(acuteness of syndromes in context)	(acuteness of syndromes in context)	(acuteness of syndromes in context)
West Africa	XXX	XXX	–
East Africa	XX	XXX	XX
Horn of Africa	–	XX	XXX
Central Asia	XX	XX	XXX
South Asia	XX	XX	XX
South East Asia	XXX	–	XX
Central America and the Caribbean	XXX	–	X
South America	XX	–	XXX
Alps (Switzerland)	X	–	X

Acuteness of syndromes: X: potentially acute XX: acute XXX: highly acute

With respect to the semi-arid context, the drought in the Sahel region of the early 1970s drew public awareness and concern (Denève, 1995; Sinn, 1988), leading to a number of development policies as well as research. The Sahel zone in particular has become a paradigmatic example of environmental degradation due to a combination of climate change and poverty-driven over-utilisation of resources (Hammer, 1999; Giri, 1989). This has given rise to international initiatives to combat desertification (UNCCD, 1997). Research on desertification concentrated for a long time on the question whether climate change and the fragility of natural resources, or increased densities of traditional land uses were the main factors contributing to the problems. New research approaches are focusing on problems, potentials and processes in these zones.

In the highland-lowland context, research has long focused on mountains alone, e.g. on mountain ecology (Ives, 1989; Gerrard, 1990), mountain cultures (Manjari, 1995; Grötzbach and Stadel, 1997), and mountain agriculture and tourism (Jodha et al., 1992; Mountain Agenda, 1999). However, the inclusion of Chapter 13 on sustainable mountain development in UNCED's Agenda 21 in 1992 strengthened a research focus that integrates these various aspects and incorporates interrelations between highlands and lowlands. The starting point for this focus was the observation that most mountain and highland systems in the developing countries of the tropics and sub-tropics are resource-rich zones, contrary to the situation in most developed countries (Myers et al., 2000).

1.6 Swiss National Centres of Competence in Research (NCCRs), and the NCCR North-South

In order to maintain Switzerland's position as a leader in research, the Federal Government and Parliament, at the request of the Swiss National Science Foundation (SNSF), introduced a new mechanism in 1999 to support cutting-edge research in the country. As a result, National Centres of Competence in Research (NCCRs) were established and given a maximum funding perspective of 12 years. The SNSF will evaluate each of the 14 NCCRs created so far after four and eight years, and decide whether their activities can be encouraged for another four years after assessing their research results.

NCCR programmes place special emphasis on interdisciplinary approaches and on innovative initiatives within the disciplines. In addition, they stimulate concentration of resources, distribute tasks more effectively among Swiss research institutions, and promote partnerships between academia and the outside world. The NCCRs have also committed themselves to knowledge and technology transfer and support of young researchers. A key idea is to employ a bottom-up approach in which researchers not only propose the themes but also create the structures to carry out their research and exploit the results. A total of CHF 529 million has been allocated to the 14 NCCRs for the first four-year period.

The NCCR North-South programme has introduced a set of research methods that fulfil the criteria of "sustainability-oriented development research". The orientation and selection of research components have been based on an

National Centres of Competence in Research (NCCRs)

The Swiss Federal Council's 1998 research policy (Federal Council, 1998) stipulates that a new series of "National Centres of Competence in Research" (NCCRs) should be created in four main fields: the life sciences, the social sciences, sustainable development and environment, and information and communication technologies.

These NCCRs promote long-term research projects in areas of vital strategic importance for the evolution of science in Switzerland, the country's economy and Swiss society (see the SNSF web site). Each National Centre of Competence is based in and managed from a university or other renowned research institution. A network links the research groups from this home institution with other teams throughout Switzerland. The following aspects are decisive for the approval of a National Centre of Competence: it must conduct research of outstanding, internationally recognised quality, and actively foster knowledge and technology transfer, training and the advancement of women researchers. A further aim of the NCCRs is to generally restructure and improve the organisation of Swiss research. Federal funding for the NCCRs is approved by Parliament, and supplemented by funding from the institutions themselves and from third parties. Launched in 2001, the programme is expected to include up to 25 NCCRs in its final stage.

Source:

SNSF web site

initial qualitative appraisal of selected syndrome contexts in the regions where they are being implemented. As research dealing with syndrome contexts cannot be carried out using conventional methods alone, innovative and integrated approaches and new methods of collaboration are being developed. Moreover, given the thematic focus of the programme, research results are urgently needed for enhancement of external measures such as emergency aid, reconstruction and development cooperation, and support for problem-solving efforts by people, public officials and the economic sector at the local level.

The NCCR North-South programme is seeking to address some of the complex problems of syndromes of global change through specifically focused research, in partnership with researchers in developing countries and countries in transition. Three long-term objectives have been defined to achieve this aim (NCCR North-South, 2000):

- To promote disciplinary, interdisciplinary and transdisciplinary research focusing on sustainable development (“transdisciplinary” in this context is understood as an approach based on collaboration with local people that takes account of their rich knowledge);
- To help develop institutions and train staff in these fields of research, in partner countries and in Switzerland; and
- To support societies and institutions in partner countries in their autonomous efforts to address syndromes of global change over the long term.

The Swiss NCCR North-South

The present-day world is threatened by increasing insecurity caused by globalisation, global disparities and processes of global change. In some regions, core problems occur in characteristic clusters that can be perceived as syndromes of global change. The mitigation of these syndromes is a challenge; it is also a precondition for achieving sustainable development.

The National Centre of Competence in Research (NCCR) North-South addresses this challenge. It focuses on international research cooperation and promotes disciplinary, interdisciplinary and transdisciplinary research that aims to enhance understanding of the status of different syndromes of global change, the pressures these syndromes and their causes exert on different resources (human, natural, economic), and the responses of different social groups and society as a whole. By identifying the potential of social systems to mitigate syndromes, considering their dynamics and adopting existing innovative solutions, the NCCR North-South primarily aims to help design ways to mitigate syndromes. The NCCR North-South enables Swiss research institutions to enhance partnerships with institutions in developing and transition countries, thereby building the competence and capacity of research on both sides to develop socially robust knowledge for mitigation action.

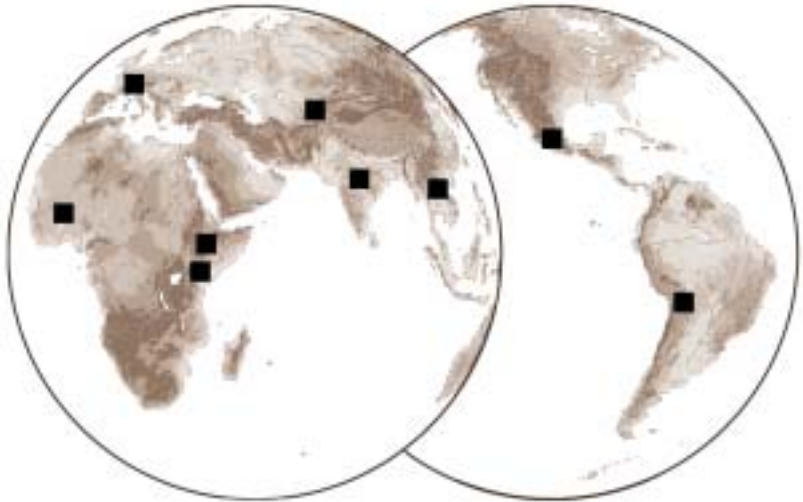
Through its activities and partnerships, the NCCR North-South also helps develop the capabilities of partner institutions and societies at large in developing and transition countries, thus eventually assisting these institutions in finding sustainable solutions with the means available in their own local contexts.

Source:
NCCR North-South
web site

NCCR funding options and experience available among Swiss partners made it possible to develop research partnerships in eight regions of the world and in Switzerland, as shown in Figure 2. The syndrome contexts studied in each region are listed in Table 1 (p. 20). Within Switzerland, the NCCR North-South is part of a closely-knit network of institutions, including the Swiss Tropical Institute (STI) in Basel, the Institute for Development Studies (IUED) at the University of Geneva, the Swiss Federal Institute of Technology in Zurich (ETHZ), the Swiss Federal Institute of Technology in Lausanne (EPFL), the Universities of Berne and Zurich, and the Swiss Peace Foundation (swisspeace). This network thus represents a very wide range of disciplines, a necessary condition when assembling the best available expertise in scientific teams that need to collaborate with local partners in the nine selected regions of the world. The Swiss network is organised as an association supported by the Swiss Commission for Research Partnerships with Developing Countries (KFPE), an organ of the Council of the Swiss Scientific Academies (CASS). This structure is an interesting example of a new type of cooperation among universities and could herald the type of “Swiss University” that is currently being discussed in research policy.

Fig. 2

The different regions, or Joint Areas of Case Studies (JACS), in which the NCCR North-South is carrying out research partnerships.
Source: NCCR North-South, 2000



Collaboration with the Swiss Agency for Development and Cooperation (SDC) is a further essential condition for implementation of the NCCR North-South programme. SDC is funding active participation by partner institutions in developing and transition countries, as well as training and education in these countries. Research that should be characterised as a joint effort undertaken by equal partners can only be carried out in this way. SDC funding, which is at a level similar to that provided by the SNSF, allows a large number of researchers in partner countries to be integrated into the programme and trained in common approaches and methods of research for mitigating syndromes of global change.

1.7 The Syndrome Pre-Synthesis Project (SPSP)

In order to develop a conceptual and methodological framework in preparation for the NCCR North-South, a further application for project funding was submitted to SNSF and SDC in March 2001. The aim of the project was to provide the means for formulating a pre-synthesis for syndrome mitigation research by means of international cooperative partnerships in each region of future involvement of the NCCR North-South. SNSF and SDC approved the Syndrome Pre-Synthesis Project (SPSP), which lasted from 1 April 2001 until 30 June 2002, and attempted to produce a series of pre-syntheses for assumed syndrome contexts in different regions of the world. The project applied a participatory approach characterised by partnership work involving representatives of local research and development institutions in these regions. The unusual term “pre-synthesis” was chosen to indicate that this first, qualitative appraisal and synthesis was made prior to the launching of the long-term research partnerships of the NCCR North-South programme.

Conceptually, the SPSP made use of the approach of the NCCR North-South programme, with the idea of using the intermediate period productively until the latter programme was approved and launched. Despite these close linkages, the SPSP had its own outputs, objectives and a specific goal, i.e. to initiate a process of participatory learning involving researchers in partner countries and Switzerland. This process focused on the definition and joint identification of syndromes of global change, on a discussion of research methodologies and on pre-syntheses of syndrome contexts in each JACS, thereby preparing long-term mitigation research in relation to the major syndromes in the urban and peri-urban, semi-arid and highland-lowland contexts.

In an initial SPSP workshop, participants from the North developed the conceptual and methodological framework for preparing pre-syntheses of each region and of the syndrome contexts identified in each region. This event, which took place in Switzerland in early April 2001 (see Chapter 3 in this publication), was followed by a series of regional workshops held between May and September 2001 in the regions chosen for future collaboration, i.e. in Africa (3 workshops), Asia (3 workshops) and Latin America (2 work-

SPSP: Syndrome Pre-Synthesis Project

The goal of the SPSP was to initiate a process of participatory learning involving researchers in partner countries and Switzerland. This process focused on the syndrome approach, research methodologies and pre-syntheses of syndrome contexts in each JACS, thereby preparing long-term mitigation research relating to major syndromes in the urban and peri-urban, semi-arid and highland-lowland contexts.

The objectives were to:

- develop a conceptual and methodological framework for a participatory assessment of core problems and their clustering in syndrome contexts, particularly in the three syndrome contexts to be addressed by the NCCR North-South programme;
- carry out eight regional pre-syntheses of syndromes as a basis for, and in preparation of, long-term research partnerships;
- identify key hypotheses and research questions to be elaborated in research partnership projects;
- prepare a synopsis of all regional syntheses of the observed syndrome contexts and publish it in this report;
- train representatives of partner institutions in developing and transition countries in methodology and pre-synthesis work relating to syndrome mitigation research.

The project was submitted to and approved by the Swiss National Science Foundation (SNSF). It was jointly funded by the Swiss Agency for Development and Cooperation (SDC), the SNSF and the implementing institutions. It was implemented between 1 April 2001 and 30 June 2002.

Source: SPSP, 2001

shops). These events were used to carry out the most important part of the synthesis work, to formulate research questions for future mitigation research and to train partners. The results of these workshops were then enhanced by important additional background information that was woven into the draft pre-syntheses for the syndrome contexts in each JACS (Chapters 4 to 12). All reports were then synoptically interpreted in a final Part (Chapters 13 and 14). The present report consists of the products of the project, including both the methodological framework and the pre-synthesis reports.

The main merit of the SPSP was that it enabled partners in Switzerland and in the South to capitalise on experience gained by them in projects that had been carried out with the support of the SNSF (e.g. the Swiss Priority Programme Environment [SPPE], Module 7 on environment and development), as well as other programmes implemented by the partners over the past decades. The project also built a bridge between the phased-out SPPE Module 7 projects and the NCCR North-South programme.

The project produced tangible results in terms of conceptual design, methodology and institutional training in partnership for designing syndrome mitigation research. It also resulted in a first “pre-”synthesis of syndrome contexts in areas where future projects have since been established. In terms of social achievements, the project facilitated local participation by stakeholders to prepare a set of partnership projects for syndrome mitigation research, and it enabled the training of local participants in coordinating research partnership activities for syndrome synthesis and design of mitigation research. Finally, it helped close the gaps created between the long-term planning process for the NCCR North-South and the conclusion of other collaborative research projects.

References

- Bolay J-C. 1995. Métropoles du tiers Monde: quel environnement pour demain? In: Bassand M, Joye D, Leresche J-P, editors. *Métropolisation*. Geneva: Georg.
- Denève R. 1995. *Sahel – Une vision controversée*. Etudes de l’UICN sur le Sahel. Gland: IUCN.
- Federal Council. 1998. *Botschaft über die Förderung von Bildung, Forschung und Technologie in den Jahren 2000–2003 vom 25. November 1998*. Berne: Swiss Federal Council.
- Fuchs RJ, Brennan E, Chamie J, Lo Fu-chen, Juha IU. 1994. *Mega-city: Growth and the Future*. Tokyo: UNU Press.
- Gerrard AJ. 1990. *Mountain Environments: An Examination of the Physical Geography of Mountains*. Cambridge, MA: MIT Press.
- Giri J. 1989. *Le Sahel au XXIe siècle. Un essai de réflexion prospective sur les sociétés sahéliennes*. Paris.
- Grötzbach E, Stadel C. 1997. Mountain people and cultures. In: Messerli B, Ives JD, editors. 1997. *Mountains of the World – A Global Priority*. London: UNU and Parthenon Publishing.
- Häberli R et al., editors. 2001. *Transdisciplinarity: Joint Problem-Solving among Science, Technology and Society*. Zurich: Haffmans Verlag.
- Hammer T. 1999. *Nachhaltige Entwicklung im Lebensraum Sahel. Ein Beitrag zur Strategietheorie nachhaltiger ländlicher Entwicklung*. Münster: IT Verlag.
- Hurni H. 1998. A multi-level stakeholder approach to sustainable land management. Introductory keynote to the 9th ISCO Conference, Bonn. *Advances in GeoEcology* 31 (II):827–836.
- Hurni H, Lys J-A, Maselli D. 2001. The role of research for development. In: Swiss Commission for Research Partnerships with Developing Countries (KFPE). *Enhancing Research Capacity in Developing and Transition Countries*. Berne: Geographica Bernensia, pp. 15–22.
- Ives JD. 1989. Mountain environments. In: Marini-Bettolo GB, editor. *A Modern Approach to the Protection of the Environment*. Città del Vaticano: Pontificiae Academiae Scientiarum, Scripta Varia, pp. 289–345.
- Jodha N, Banskota S, Partap MT, editors. 1992. *Sustainable Mountain Agriculture*. International Centre for Integrated Mountain Development, Kathmandu. London: Technology Publications.

- KFPE [Swiss Commission for Research Partnerships with Developing Countries]. 1998. *Guidelines for Research Partnerships with Developing Countries*. Berne: Council of the Swiss Scientific Academies (CASS).
- KFPE [Swiss Commission for Research Partnerships with Developing Countries]. 2001. *Enhancing Research Capacity in Developing and Transition Countries*. Berne: Geographica Bernensia.
- Manjari M. 1995. *Cultural Diversity in the Mountains: Issues of Integration and Marginality in Sustainable Development*. Prepared for the Consultation on the Mountain Agenda Lima, Peru, February 22–27, 1995. Committee on Women, Population and Environment. Boston University.
- Mountain Agenda. 1999. *Tourism and Sustainable Mountain Development*. Prepared for the Commission on Sustainable Development (CSD). Berne: Centre for Development and Environment (CDE).
- Myers N, Mittermeier RA, Mittermeier CG, da Fonseca GAB, Kent J. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403:853–858.
- NCCR North-South. 2000. *Research Partnerships for Mitigating Syndromes of Global Change. Proposal for a National Centre of Competence in Research (NCCR) North-South*. Submitted to the Swiss National Science Foundation by the Swiss Association of Research Partnership Institutions (SARPI). Berne: Centre for Development and Environment (CDE).
- Petschel-Held G, Block A, Cassel-Gintz M, Kropp J, Lüdeke M, et al. 2000. Syndromes of global change: A qualitative modelling approach to assist global environmental management. *Environmental Modelling and Assessment* 4:295–314.
- Petschel-Held G, Block A, Schellnhuber HJ. 1995. Syndrome des Globalen Wandels – Ein systemarer Ansatz für Sustainable-Development-Indikatoren. *Geowissenschaften* 13(3):81–87.
- Reusswig F. 1999. Syndrome des Globalen Wandels als transdisziplinäres Konzept. Zur politischen Ökologie nicht-nachhaltiger Entwicklungsmuster. *Zeitschrift für Wirtschaftsgeographie* 43(3–4): 184–201.
- Schellnhuber HJ, Block A, Cassel-Gintz M, Kropp J, Lammel G, et al. 1997. Syndromes of global change. *GAIA* 6(1):19–34.
- Sinn HW. 1988. The Sahel problem. Kyklos. *International Review for Social Sciences* 41(2):187–213.

- SPSP. 2001. *Syndrome Pre-Synthesis Project. Proposal Submitted to the Swiss National Science Foundation and Swiss Agency for Development and Cooperation*. Berne: Centre for Development and Environment (CDE).
- UNCCD. 1997. *United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa*. Bonn: UNCCD.
- UNCHS. 1996. *Istanbul Declaration on Human Settlements*. United Nations Conference on Human Settlements.
- UNESCO. 1996. *World Science Report*. Paris: UNESCO.
- WBGU [German Advisory Council on Global Change]. 1997. *World in Transition: The Research Challenge*. Berlin: Springer Verlag.
- WCED [World Commission on Environment and Development]. 1987. *Our Common Future*. Oxford: Oxford University Press.
- Waardenburg G. 1999. *EU-LDC Research Partnership in Critical Perspective*. The Netherlands Ministry of Foreign Affairs, pp. 34–35.
- Wolffers I. 2000. *The Democratisation of Science: Demand-driven Health Research for Development*. Amsterdam: VU University Press.