

### 3 **The Transdisciplinary Approach to Regional Pre-syntheses: A Basis for Syndrome Mitigation Research**

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#### **Abstract**

Eight regional workshops and the resulting pre-syntheses for the eight regions worldwide defined as “Joint Areas of Case Studies” (JACS) constituted the core of the “Syndrome Pre-Synthesis Project” (SPSP), the aim of which was to provide a transdisciplinary foundation for the proposed NCCR North-South. An approach and a methodology for the regional workshops were designed on the basis of initial conceptual preparation that linked the concepts of “sustainable development” and “syndrome mitigation” and explored their interrelations. The workshop participants represented a broad range of research and development institutions. They formed regional think tanks whose tasks were to critically review and discuss the proposed framework of the NCCR North-South, then address problems of sustainable development in the various syndrome contexts in the region, weight and cluster the problems, and identify the type of research that would help mitigate syndromes and enhance sustainable development in each region. In doing this, the workshops built on the broad range of knowledge, expertise and experience of participants. Later, selected participants further refined workshop results and drafted pre-synthesis reports that anticipated the specific requirements and research focuses of the NCCR North-South for the respective JACS regions. The resulting products and debates revealed a diversity that is a source of innovation and an expression of lively and productive research partnerships within the NCCR North-South.

### 3.1 The “Syndrome Pre-Synthesis Project” (SPSP): an opportunity

The Syndrome Pre-Synthesis Project (SPSP) discussed in the present publication provided a unique opportunity to initiate transdisciplinary processes in the regions and among the partners involved in the NCCR North-South (see Chapters 1.6 and 1.7). This opportunity arose from the specific positioning of the SPSP project between the development of the NCCR North-South proposal (1999–2000) and the approval and launching (in late 2001) of this long-term partnership programme.

The transdisciplinary processes within the SPSP were initiated in three steps that significantly refined the initial approach of the NCCR North-South and concretised the programme’s inaugural phase.

1. *Conceptual workshop*: In a first step, the “syndrome concept” (*Syndromkonzept*) developed by WBGU (1997) was analysed and adapted during a conceptual workshop held in Switzerland in early April 2001. In particular, potential core problems occurring in the syndrome contexts selected by the NCCR North-South – urban and peri-urban, semi-arid, and highland-lowland (see Chapter 1.5) – were identified, and these core problems were ranked in order to assess their importance and urgency. This formed a conceptual, methodological and thematic basis used by the participating stakeholders – primarily the Swiss co-applicants of the NCCR North-South and their closest collaborators – to develop an approach for carrying out regional workshops in the proposed “Joint Areas of Case Studies” (JACS; see Chapter 1.6).
2. *Regional pre-synthesis workshops*: In a second step, eight regional workshops were held in the JACS regions, each lasting about three to four days and coordinated by one of the NCCR North-South co-applicants and his or her regional partners. The participants, who were invited as regional representatives of a broad range of research and development institutions, formed regional think tanks. In a structured appraisal process that built on the broad range of knowledge, expertise and experience represented by participants, the think tanks addressed problems of sustainable development in the various syndrome contexts in each region, weighted and clustered the problems, and identified the type of research that would lead to mitigation of syndromes and enhancement of sustainable development in each region. Selected participants further

refined workshop results and drafted pre-synthesis reports that anticipated the specific requirements and research focuses of the NCCR North-South for the respective JACS regions.

3. *Concretising the inaugural phase of the NCCR North-South:* In a third step, selected colleagues from all JACS regions attended an international conference in Grindelwald, Switzerland that also marked the start of the NCCR North-South. At this conference the eight pre-syntheses were presented; their implications for the conceptual framework and the concrete research projects of the NCCR North-South were negotiated and corresponding results were incorporated. This formed the basis of the present publication, which presents the eight pre-syntheses and the refined conceptual framework. The conference also made it possible to establish research priorities, which have meanwhile determined the selection in all JACS of suitable candidates for research grants.

The chance to use these three steps to implement the SPSP and carry out the project in the phase between the development of the proposal and the start of the NCCR North-South was a decisive opportunity, both in itself and with regard to the initiation of the long-term research partnership programme. The SPSP resulted not only in regional pre-syntheses of syndrome contexts and syndrome mitigation research; it also made it possible to refine and concretise the conceptual framework of the NCCR North-South, and to specify research questions, approaches and projects. Most importantly, the SPSP made it possible to contextualise the general approach to research in the JACS regions suggested in the NCCR North-South proposal, and to reframe it in a transdisciplinary process. Finally, this process also served to create and broaden ownership of the NCCR North-South – a key prerequisite of any research partnership programme (see Chapter 1.4).

### 3.2 The syndrome concept: a flexible and innovative basis

Why was it crucial to address the question of contextualisation and to broaden ownership through the SPSP? And how does this relate to the general conceptual framework of the NCCR North-South, with a focus on syndrome mitigation? At this stage, it is important to briefly evoke the reasons that led to choosing the “syndrome concept” (*Syndromkonzept*) as an integrative framework for the NCCR North-South. On the one hand the programme proposal was developed under specific circumstances; and on the other, there was a need to choose a conceptual framework that makes it possible to combine inter- and transdisciplinary methods with in-depth disciplinary research.

When the Swiss Association of Research Partnership Institutions (SARPI) decided in 1999 to compete for designation of a Swiss National Centre of Competence in Research (NCCR), it had to take into account certain conditions and circumstances. First, it was clear that SARPI was competing with programmes focusing on different types of research thought to have comparative advantages for Switzerland at the international level, and not with other programme proposals dealing with development issues and/or collaboration between the North and the South. Second, SARPI members were aware that the proposal only stood a chance if it could convincingly show that joining forces among Swiss research institutions active in North-South collaboration would lead to significant added value when compared to single institutions’ potentially high-quality outputs. Finally, SARPI had to deal with the very unfortunate situation that time and circumstances did not allow for participatory development of the NCCR North-South proposal involving partners from developing and transition countries from the outset.

The specific circumstances under which the proposal was developed and the highly competitive environment had implications for the institutional network that participated in elaborating the proposal. These circumstances also had a major impact on the choice of the overall conceptual framework. While it was impossible to develop the proposal in a truly participatory manner, the structure of the NCCR North-South relied on Swiss institutions with a long record of research partnerships and consolidated networks of partners in the South. This made it possible to indirectly integrate the views of these partners into the proposal.

The circumstances also influenced the choice of conceptual framework for the NCCR North-South: a framework had to be found that (1) was convincing beyond the circles directly involved in development-oriented research partnerships, (2) could be relevant to the political level in Switzerland and appeal to the country's sense of global responsibility, (3) indicated areas in which integrative added value could be expected from the proposed NCCR North-South, and (4) – most importantly – left enough room to accommodate the needs and views of partners in developing and transition countries, and fulfil the principle of partnership-based and participatory research (see Chapter 1.4).

Beyond these requirements SARPI was looking for a framework that made it possible to combine integrative approaches with in-depth research. This was based on the shared conviction and experience that the only path to innovative solutions and research-based problem-solving strategies in the complex field of sustainable development is through a combination of, and iteration between, in-depth disciplinary and interdisciplinary research on the one hand, and integrative, transdisciplinary research on the other.

Against this background, SARPI borrowed the concept of “syndromes of global change” from the German Advisory Council on Global Change (WBGU, 1997), using it as the starting point for the development of the conceptual framework of the NCCR North-South. The original “syndrome concept” was considerably modified in the proposal for the NCCR North-South, in order to meet the above requirements. The most important modification was the inclusion of a conceptual relation to the framework of sustainable development, and a focus on mitigation rather than analysis of syndromes of global change (see Chapter 2). The choice of this framework underlined some basic methodological and normative decisions made by SARPI when drafting the proposal:

- (1) The concept of “syndromes of global change” implies links or relations between trends and dynamics at the global level and specific constellations and development problems in concrete situations. Besides the importance of this systemic view as a scientific hypothesis, the assumption of such relations is a clear appeal to Swiss authorities not to neglect global responsibilities when developing an instrument of national research policy such as the NCCRs.
- (2) However, as is the case when the term “syndrome” is used in medicine, the concept of “syndromes of global change” underlines that these rela-

tions are neither deterministic nor unilateral, but complex, interwoven and “messy”. This implies that actors have a certain degree of freedom, and that there is a potential for participatory action and influence of development activities within concrete situations. The use of the term therefore underlines the intention – and the necessity – of bridging the gap between general and specific aspects of concrete constellations of core problems. This is important for the NCCR North-South’s scientific position.

- (3) In the NCCR North-South proposal, the focus on mitigation rather than on analysis of syndromes of global change underlines the intention – and the imperative – that research contribute not only to understanding processes but also to enabling action and solutions. The use of the term “mitigation” also cautions against expectations and calls for modesty in view of the above-mentioned complexity. At the same time it gives scope for participatory and innovative approaches and processes in concrete situations.

These considerations underline that it was not the intention of the NCCR North-South proposal to provide an integrative theoretical framework for its activities. Instead, the initiators of the programme decided to launch the NCCR North-South within a conceptual framework that highlights some basic positions taken by SARPI, indicates in what direction added value can be generated, and provides guidance and flexibility for creative, innovative and transdisciplinary processes in the NCCR North-South. Choosing such a conceptual framework was a prerequisite to redressing the unfortunate fact that partners from developing and transition countries were only implicitly involved in developing the proposal. As modified by the programme initiators, the “syndrome concept” enabled differentiation and contextualisation of the NCCR North-South’s approaches, while at the same time broadening ownership of the programme through the SPSP project.

### 3.3 Core problems of non-sustainable development: an entry point

The “syndrome concept” as adapted and modified in the NCCR North-South proposal is very closely linked to, and builds on, the conceptual framework of sustainable development (see Chapter 2.2). In other words, the underlying reason for adopting the syndrome concept is to foster sustainable development. Sustainable development is defined here as encompassing three dimensions: ecological sustainability, socio-cultural and socio-political sustainability, and economic sustainability (see Fig. 2 in Chapter 2). Independently of how these dimensions are selected and the processes and dynamics that govern them, it is necessary, first of all, to realise that sustainability is a normative concept. It entails defining values and setting goals for development in the three above-mentioned dimensions. The normative aspect of sustainability requires that questions such as “who defines values and sets goals”, and “who participates in negotiations on conflicting values and goals” need to be asked systematically, taking into account that the answers come from people who are members of a society concretely affected by the issues at stake. In other words, sustainable development only makes sense and can be meaningfully specified in a concrete societal context. Contextualisation of the three dimensions of sustainability mentioned above, and related concrete social negotiation processes, are the core of sustainable development. Another conclusion is that sustainable development has a specific meaning in each concrete societal context, and therefore also requires context-specific action (Wiesmann, 1998).

The modified syndrome concept presented in the NCCR North-South proposal basically acknowledges the fact that sustainable development is context-bound (Hurni and Wiesmann, 2001). However, it also postulates that development trends perceived as non-sustainable within a concrete societal context are at least to some degree linked to global trends and dynamics. Even without further specifying the links thus postulated, this hypothesis leads to the underlying premise of the NCCR North-South’s syndrome approach: similarities between patterns and clusters of problems of non-sustainable development can be identified in various situations and contexts that have similarities. If this premise is sound, then the shared pattern of problems can be called a “syndrome”, and the specific local circumstances in which a syndrome is identified can be said to constitute a “syndrome context” (NCCR North-South, 2000). The term “syndrome” is thus based on the hypothesis that these situations are exposed to similar driving forces and

underlying causes that might be related to global dynamics, trends and dependencies (Reusswig, 1999). This in turn implies that similar ways of achieving more sustainable development can be developed for contexts sharing comparable patterns of problems of non-sustainable development. The aim of “*mitigating* syndromes of global change” can be pursued by searching for such ways of achieving more sustainable development (NCCR North-South, 2000).

Given the relation between the conceptual frameworks of “syndromes of global change” and “sustainable development”, it is obvious that defining and assessing core problems of non-sustainable development in concrete contexts is an extremely important and decisive entry point in syndrome mitigation research. Such assessments make it possible to address the following questions: a) Can similar clusters of problems of non-sustainable development and underlying processes, dynamics and trends be identified in several concrete contexts? b) If this is the case, does it imply that similar and congruent ways of mitigating syndromes in a participatory manner might exist?

During the conceptual workshop in Montézillon, Switzerland, that initiated the SPSP (see Chapter 3.1 above), participants agreed that identifying core problems of non-sustainable development could serve as a key entry point for designing syndrome mitigation research and therefore also for elaborating the planned regional pre-syntheses. Against the background of the normative dimension of sustainable development, the selection of this entry point implies that transdisciplinary negotiations must be the starting point for syndrome mitigation research in concrete contexts. Elaboration of a regional pre-synthesis for syndrome mitigation research must therefore be based on much more than a simple synthesis of existing knowledge and the identification of research gaps from the point of view of the participating disciplines. Such a pre-synthesis must be based on an explicit and negotiated identification of what dimensions of non-sustainable development are relevant within the specific context. This transdisciplinary negotiation process is a normative act in which selection of core issues for research is explicitly declared to be a value-based process.

The Montézillon conceptual workshop established an extensive common list of potential core problems, arguing that this list could foster transdisciplinary negotiations in the individual regional pre-synthesis workshops and increase the possibility of identifying similarities and differences between



clusters found in the different regions and syndrome contexts addressed in the JACS of the NCCR North-South. This common list suggests where sustainability problems might – but need not necessarily – occur in different contexts and at various degrees of acuteness. The common list of potential core problems elaborated during the Montézillon conceptual workshop (see Table 1) was also an important means of promoting interdisciplinary exchange and collaboration among the various participating Swiss research institutions.

Table 1

Scientific realms	Checklist of potential core problems of non-sustainable development	Common list of potential core problems of non-sustainable development; version negotiated among Swiss partner institutions of the NCCR North-South at the SPSP conceptual workshop in Montézillon, Switzerland, 2 April 2001.
Political & institutional	1. Dominating and conflicting world views and ethical values	
	2. Contradictory and inadequate policies	
	3. Inadequate institutions	
	4. Governance failures and insufficient empowerment of actors	
	5. Unequal distribution of power and resources	
Socio-cultural & economic	6. Social and ethnic tension	
	7. Violent conflicts	
	8. Unused potential of innovative capacities and existing knowledge	
	9. High socio-economic disparities	
	10. Incompatible and fragile economic systems	
Population & livelihood	11. Dominance of the existing global economy	
	12. Constraints on human rights and individual development potential	
	13. Poverty and insecurity of livelihoods	
	14. Health risks and vulnerability to ill-health	
	15. Population pressure and migration	
Infrastructure & land use	16. Poor water supply and environmental sanitation	
	17. Lack of adequate infrastructure (including energy supply)	
	18. Problems of access to land and natural resources	
Bio-physical & ecological	19. Inadequate availability of freshwater	
	20. Land degradation	
	21. Pollution and overuse of renewable natural resources	
	22. Loss of biological diversity	
	23. Risks of natural hazards and climate change	
	24. Depletion of non-renewable natural resources	

When compared with the original list of core problems presented in the NCCR North-South proposal (see Table 1 in Chapter 2, p. 39), the list of potential core problems of non-sustainable development shown in this table clearly indicates that the Montézillon workshop led to a refinement of the NCCR North-South's original syndrome approach. The number of potential core problems increased from 18 to 24; moreover, they underwent reformulation, indicating that participants had discussed related conceptual issues in a very detailed manner. Further modifications, refinements and evaluations of this list in the regional workshops (see Chapters 4–11) were also a direct result of the transdisciplinary process initiated by the SPSP and an expression of the progress achieved by the project. An analysis and synopsis of the process is presented in Chapter 13.

### **3.4 Unity and diversity in regional approaches and pre-syntheses**

Based on the methodological experience gained in the conceptual workshop in Montézillon, the eight regional pre-synthesis workshops formed the core of the SPSP project. These workshops took place between May and September 2001 in all Joint Areas of Case Studies (JACS) of the NCCR North-South (see Chapter 1.6), with the exception of the JACS situated in the Swiss Alps (see Chapter 12). These workshops brought together representatives of a broad range of research and development institutions who formed regional think tanks in order to design a framework for long-term collaborative research and action for sustainable regional development in the respective JACS regions. As outlined in Chapter 3.1, these regional workshops offered a great opportunity to anticipate the focuses of syndrome mitigation research: by elaborating regional pre-syntheses and initiating transdisciplinary processes, the proposed general approach in the JACS regions was contextualised and reframed; moreover, ownership of the NCCR North-South was broadened.

The methodology for the transdisciplinary regional workshops and subsequent formulation of pre-syntheses developed in Montézillon included the following steps and expected outputs:

1. *Selection and definition of "syndrome contexts" in the JACS regions:*  
Political considerations regarding the role and experience of Swiss development cooperation and research led the initiators of the NCCR North-

South to select three major syndrome contexts in which syndrome mitigation research should concentrate. These broad societal, economic, political and ecological contexts – urban and peri-urban regions, semi-arid regions in transition, and highland-lowland interactive regions (see Chapter 1.5) – were not defined as strict analytical categories for the programme. The Montézillon workshop thus suggested to the participants in the regional workshops that one or several syndromes might be identified in each of these contexts. The first step in the regional workshops was therefore to describe these contexts in each JACS region, and discuss whether sub-contexts needed to be defined to accommodate the fact that relatively homogenous and specific clusters of core problems of non-sustainable development might exist. Participants then had to select the most important contexts and sub-contexts they had described, using an explicit, value-driven transdisciplinary process of negotiation.

2. *Definition and appraisal of core problems for the selected syndrome contexts:* In a further transdisciplinary step that consisted of appraisal methods and built on the knowledge, expertise and experience of each think tank, participants then defined core problems of non-sustainable development in each syndrome context and sub-context selected, and assessed the importance and urgency of each problem. One important issue was to determine whether a problem had been defined normatively as a core problem of non-sustainability independently of its systemic functions. For example, “poverty” is a sustainability problem that must be mitigated, independently of its various possible functions within the sustainability system. Ranking the severity of the core problems per selected context was done on a global scale ranging from (1) = “not relevant by global comparison” to (7) = “worst case by global comparison”.
3. *Consolidation in a common list of core problems of non-sustainable development:* The lists and definitions of core problems identified in the selected contexts were then consolidated in a single common list per workshop. This common list of core problems of non-sustainable development did not simply result from summarising analyses of syndrome contexts, but it resulted from a complex process of negotiation within the think tank. Indeed, such a list represents a combination of experience, knowledge and normative definitions. Elaboration of such a list is therefore a major transdisciplinary step towards a common and explicit view and understanding of sustainable development in a specific region and by a specific think tank. The resulting list in each case was also an

important source of broadened ownership of the NCCR North-South in the JACS regions. A further outcome of this process is the productive debate and the institutional integration of Individual Projects (IPs) and JACS in the NCCR North-South that resulted from a comparison and merging of the lists elaborated in the different JACS workshops (see Chapter 13).

4. *Elaboration of a research agenda for mitigation approaches in the selected syndrome contexts:* As already mentioned above, the primary focus of the NCCR North-South is not the analysis of syndromes as such, but research for mitigating syndromes of global change. Therefore, the JACS workshops were asked to creatively identify research projects that could contribute to mitigating sets or clusters of core problems identified in the selected syndrome contexts. The workshop approach thus built on the broad available regional knowledge and experience of sustainability-oriented research and development. In a further step, participants were asked to compile the proposals for research projects in a draft agenda for mitigation research in the selected syndrome contexts in the JACS, by setting priorities according to perceived importance and urgency. The eight resulting draft research agendas became a cornerstone for the detailed research design of the NCCR North-South (see Chapter 14).
5. *Formulation of a pre-synthesis report for the respective JACS region:* To enable comparative assessment and integrative debate within the overall NCCR North-South, a common structure was proposed for the pre-syntheses of the regional workshops (see Chapters 4–11). This structure required systematic presentation of workshop outputs according to the steps mentioned above, and provision of additional information to supplement the work by the think tanks where necessary. In particular, reporters were asked to include an account of the state of research in the fields covered by the proposed research agenda for mitigation approaches, in order to guarantee uniqueness at the international level and prevent duplication of research by the NCCR North-South.

The above five components of the methodology for regional workshops and pre-syntheses constituted a standard procedure that was not completely binding for the think tanks in the JACS regions. As explained in Chapter 3.2, the regional workshops provided an opportunity to contextualise syndrome mitigation research, while also creating NCCR North-South ownership by

the partners in the JACS. This opportunity implied that the respective think tanks had to feel free to discuss the conceptual framework, adapt it to their needs and thus also modify the standard regional workshop approach. Almost all workshops took advantage of this freedom, though to very different degrees, thereby creating productive diversity and a questioning attitude within the overall frame of the NCCR North-South.

Most of the workshops shortened or modified one or more of the steps in the procedure. Apart from this, the following four major triggers of creative diversity can be distinguished:

- *Specific sectoral composition of the think tank:* As the NCCR North-South builds partly on existing competence and partnerships in the JACS regions, it is obvious that syndrome assessments and research designs produced by each workshop reveal at least a slight topical bias. A few workshops decided to concentrate closely on one core topical focus, probably because the respective think tanks were composed accordingly. The advantage of such a modified approach is that it results in a more in-depth analysis and research design in the selected field; its disadvantage for the NCCR North-South programme is the resulting difficulty to integrate the results into the debate on overall sustainability issues and syndrome mitigation within the framework of the NCCR North-South.
- *Addition of new focuses to the pre-synthesis approach:* Some think tanks decided to add aspects and enter debates that could not be subsumed under the standard approach. Most important was the attempt in the South Asia workshop to include an assessment of issues that can be interpreted as having potential to promote sustainable development. Although the resulting list of issues cannot be compared with other pre-syntheses, it opens an important debate on the possibilities and limits of integrated problem-oriented research approaches within the NCCR North-South and other such programmes.
- *Modification of the syndrome contexts or omitting selection:* In some workshops the think tanks decided to radically modify the three general contexts proposed in the NCCR North-South proposal, or to neglect them altogether. This change was motivated by the fact that the three syndrome contexts had labels with a strong geographical bias. The change triggered a productive debate on the dimensions that should characterise a syndrome context. However, apart from the fact that this choice affected a

basic pillar of the NCCR North-South proposal that had been agreed on for strategic reasons, it also increased the difficulties in finding a common ground for discussion and to integrate these workshops and their pre-syntheses within the general framework of the SPSP.

- *Critique of the “syndrome concept”*: In most of the workshops the basic assumptions of the “syndrome concept” underwent critical examination, clarification and modification. However, in some cases criticism was so basic that it could not be accommodated in the flexible conceptual framework as proposed for the future NCCR North-South. Such basic criticism made it difficult for participants not to completely reject the standard approach for the regional workshops and respective pre-syntheses. However, it also triggered a productive reflection on how the NCCR North-South can overcome the connotation of pathology conveyed by the term “syndrome” and enhance its pro-active and empowering approach to syndrome mitigation.

At first glance, it may seem that the diversity resulting from the above types of modification of the approaches to the regional workshops and pre-syntheses hinders comparison and integration within the overall framework of the NCCR North-South. However, this is only partly true, because all modifications made by the think tanks in the JACS workshops in a desired process of contextualisation and creation of ownership within the NCCR North-South led to creative and productive debates that will eventually enhance the quality of the overall programme and its conceptual framework.

In this sense, one can state that the diversity presented in the following pre-syntheses (see Chapters 4–11) does not impede integration within the overall NCCR North-South; instead, it is a source of innovative potential and an expression of lively and productive research partnerships. Beyond diversity and initial disagreement with certain premises, the eight pre-syntheses also reveal a strong and unifying commitment to integrative, transdisciplinary and sustainability-oriented research for development.

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