

30th AGUASAN Workshop (2014): Briefing Note

WATER CHALLENGES BEYOND WASH

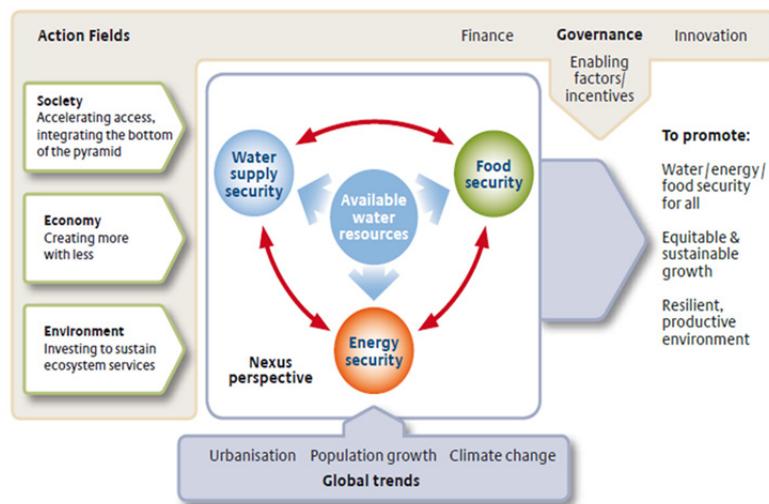
Bridging the water, food and energy sector divides

Topic

The **centrality and challenges of water at global level** have been again clearly articulated in 2013/14 in the various consultation processes on the post-2015 development agenda. Water is at the core of sustainable development in its social, economic and environmental dimensions. Water is also directly linked to peace and security. However, the world's freshwater resources are over-exploited, wasted and polluted to a degree never experienced before in the history of humanity. The magnitude of this global water crisis can be significantly reduced, but for this massive efforts into increasing water productivity in all sectors are required to balance supply and demand.

Global water security has thus to be addressed as one of the world's highest sustainable development priorities. Although the water community widely agrees on this, there are different opinions on what such a SDG for water should entail. While WASH is not disputed and well justified by the human right to water & sanitation, the other crucial issues of sustainable water resource management, of safe wastewater management and of water quality, will only get into the future development agenda as long as the interlinkages with other important development challenges such as food security, energy and the environment are clearly articulated. Hence, cross-sector issues are receiving increased attention, providing tremendous opportunities for innovations.

Since the 2011 Bonn Conference, the **Nexus approach** is widely discussed. Accordingly, increasing water, energy and food demand worldwide and related conflicts are more and more understood as interlinked problems which can only be solved based on integrated approaches to ensure water, energy, and food security for a more social equitable and ecological sustainable global development. These interlinkages are presented in the adjacent figure (Hoff, 2011).



Main features of a Nexus approach:

1. Increasing **resource efficiency** (productivity of resources; "creating more with less"), decoupling of economic development from resource use through technological innovations and recycling
2. **Reducing trade-offs** (conflict of goals)
3. Building **synergies**: "system efficiency" instead of "isolated sector productivity"
4. Improving governance across sectors: **dialogue** between sectors to support **equitable allocation and efficient use** of natural resources
5. Accelerating access, **integrating the poorest**
6. Investing to sustain **ecosystem services**



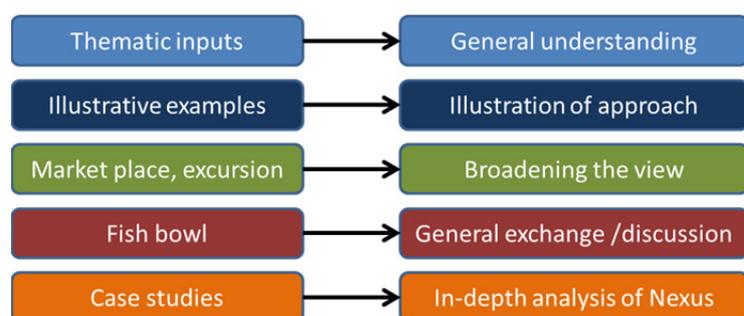
This implicates that existing holistic approaches like “Integrated Water Resources Management” or “Integrated Natural Resources Management” **need to be rethought and further developed**, taking into consideration water-using sectors whose policies and strategies are governed by many factors outside the water sector.

Process and Highlights

Against this backdrop, an international group of 56 sector professionals from the water for people, for food, for energy and for environment communities gathered in Männedorf, Switzerland from June 16 to 20, 2014, in the framework of the 30th AGUASAN Workshop. The event was dedicated to the key question of **“How to bridging the water, food and energy sector divides for increased benefits and resilience in watersheds?”**. By displaying thematic key inputs and looking at a set of topic cases from different contexts and with varied approaches, the workshop aimed at:

- **Learning and sharing experiences** about successful and failing cross-sector approaches addressing sustainable water resources management at local level and exploiting the water-energy-food interlinkages;
- **Breaking silos** of conventional decision-making and practices and give way to approaches that address trade-offs and build synergies across sectors and their actors in watersheds;
- **Developing practical recommendations, strategies or approaches** for operationalizing more concerted and multiple uses of water for increased benefits and resilience in watersheds.

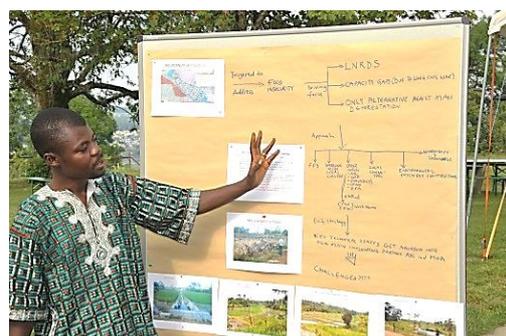
The five days cumulative learning, experience exchange and knowledge generation on the Nexus approach was based on the following **main working steps**:



The **thematic inputs**, which presented water & food interlinkages, water & energy linkages and the **illustrative examples**, created a basis for a better understanding of the Nexus approach.

Thematic inputs / illustrative examples highlights referring to resource efficiency:

- **Irrigated agriculture** is the major water user worldwide; consequently improved water and energy efficiency of such systems is required.
- Competition between **crop production for biofuels and for food** is a crucial issue.
- **Agricultural production** is increasing much faster than the world's population.
- Usage of **“hidden” hydropower potential** in water supply, irrigation and other water infrastructure is an important opportunity to be taken ($P = Q \times h \times \eta$; P electric power in [kW], Q available flow in [m³/s], h head in [m]).
- A case study from Bolivia showed how **watershed protection** is financed through an explicit fee, specified on the water bill (“reciprocal watershed agreement”).
- Combination of **improved sanitation and biogas** use is a perfect Nexus case (example from DPR Korea).



Three **case studies** were used for a more in-depth analysis in smaller working groups in order to finally get an answer to the crucial question on “*what does it mean in practical terms to move away from silo thinking to more cross-sectoral approaches*”. While doing this analysis in different working steps, the **market place** and the **excursion** to the Linth Plain (flood protection, land improvement and restoration measures) gave the opportunity to broaden the participants’ view and get information on various types of integrated approaches.

The market place was set up as a “speed sharing” method at various market stands where the following topics were briefly presented and discussed: groundwater protection in DPR Korea, food security in Liberia, watershed development in Ethiopia, water resource assessment in Chad, water stewardship strategy of the WWF and the “recharge water resources, retain rainwater, reuse water (3R)” approach in Nepal. The broader discussion in a **fish bowl** allowed participants to exchange in the plenary after having received various inputs and having started the group work.



Main Results

The main results came up from the intensive group work which was based on the **case studies**.



The **Nepal case study** on “*Participatory Water Use Management Plan to operationalise IWRM at local level*” looked at:

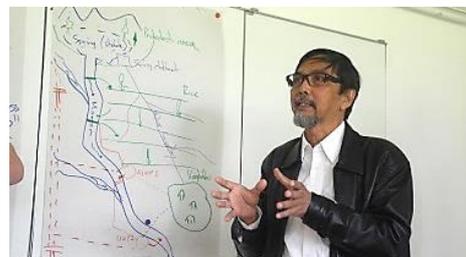
- How to **include disadvantaged groups** in the negotiation process to ensure **equitable allocation** of resources? It found bottom-up planning, enabling participation, using influential people to encourage participation (especially in a cast system) and finally continuous capacity building and monitoring by the community itself to be crucial aspects.
- How to bring in **environmental aspects**? For this purpose it was recommended to use a problem tree as analytical tool, to adopt a “landscape perspective” (e.g. watershed-based), develop reciprocal benefits and to adapt school curricula.
- How to **scale up the approach**? Development of tools and guidelines, strong civil society involvement, definition of roles of public and private institutions, a top down policy combined with bottom up initiatives, capacity and resources at different levels and finally a strong policy advocacy were recommended.

For the **Fergana Valley case** on “*IWRM to solve the upstream-downstream inter-sector conflict between energy and irrigation*”, three foci were defined.

- **Institutional/political aspects**: “energy vs. irrigation” and the “legacy of divide & rule” are main hindering factors from the Soviet heritage, besides other political and communication/data related problems (no transparency or exchange of data & information). Recommended entry points to introduce a more Nexus-like approach were to link water with energy, create win-win situations and increase water productivity.
- **Environmental and infrastructure aspects**: main challenges are sanitation, flood risks, salinization, lack of understanding of water cycle and lack of holistic thinking. Recommendations: opening up and overthinking of the scope of the project, hydrological studies (→ develop scenarios, cost-benefit analysis), environmental education, improvement of the policy dialogue and institutional set-up and better donor coordination.
- **Social dynamics**: “Man” is the key challenging factor but also the “key factor of hope for change”. Recommendation: revive and adapt the traditional societal structures, change people’s mind-sets through pilot demonstration sites, provide incentives for innovation, establish and support communication and dialogue (as a multi-level and multi-stakeholder process) and create an enabling environment for policy change, show and demonstrate the added value of the Nexus approach and of cooperation versus competition.



For the **Indonesia case study** on *“Community benefit from hydropower exploitation in irrigation systems”*, where finally three mini hydropower plants were successfully integrated into an existing irrigation scheme, the success factors as below were identified. Looking at a possible scaling up of this approach, the limiting factors are to obtain a power purchase agreement and to access investment financing.



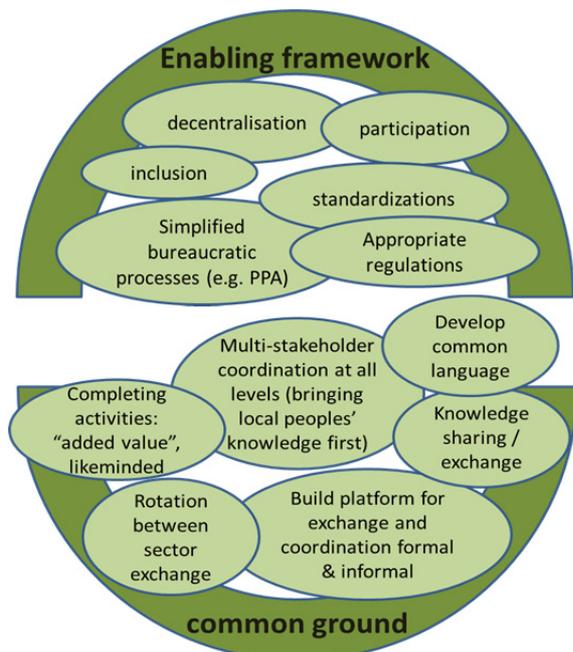
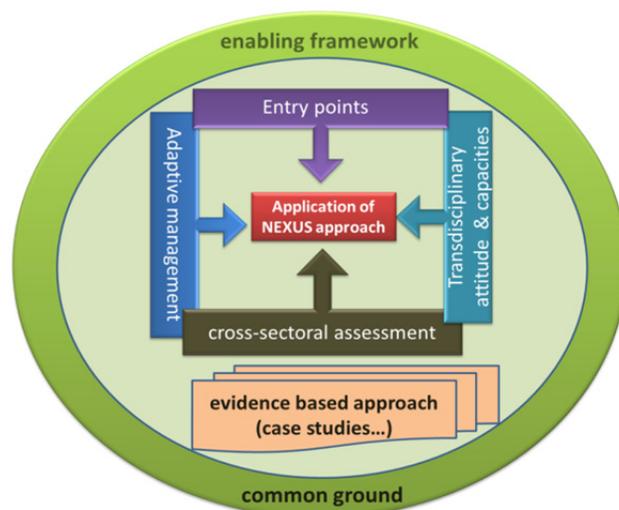
- ✓ Good cooperation between relevant stakeholders
- ✓ National strategy for decentralised electrification
- ✓ Feed-in regulation
- ✓ Local ownership of asset (!)
- ✓ Access to start-up funding
- ✓ Local turbine production and spare parts supply
- ✓ Incentive for maintenance (channel used for power and food/irrigation!)
- ✓ Social credit fund with revenues from electricity sales
- ✓ No water use conflicts
- ✓ Renewable energy expertise
- ✓ Regular training on technical and financial aspects
- ✓ Successful pilot project (leading to implementation of 2nd and 3rd scheme)
- ✓ Presence of facilitator to “enhance” livelihood development
- ✓ Always enough water available (well protected catchment area)

Conclusions

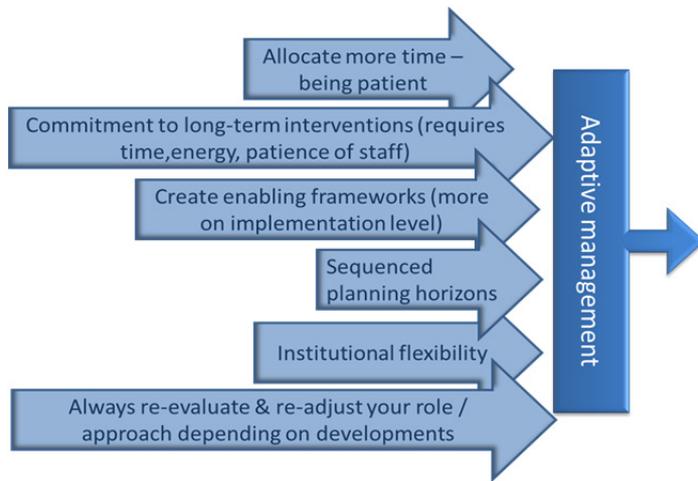
The workshop concluded that **moving away from silo thinking to a more cross-sectoral approach** as suggested by the Nexus principle is linked to **several preconditions** as summarised in the adjacent figure:

Enabling framework / Common ground:

Important elements in an enabling framework are **appropriate regulations, simplified bureaucratic processes, standardisations, decentralisation and participation**. In general, to change a policy or even to merely influence it is considered extremely difficult. However, since **government policies** (e.g. subsidisation) have significant impact on the various sectors and limit the “scope of action”, it is vital to take them into account. In the case of Indonesia an expansion of the hydropower scheme in the irrigation channel was attractive because the option of feeding the surplus electricity into the national grid was legally binding.



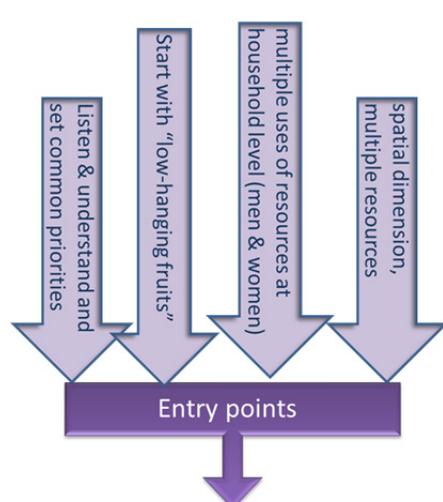
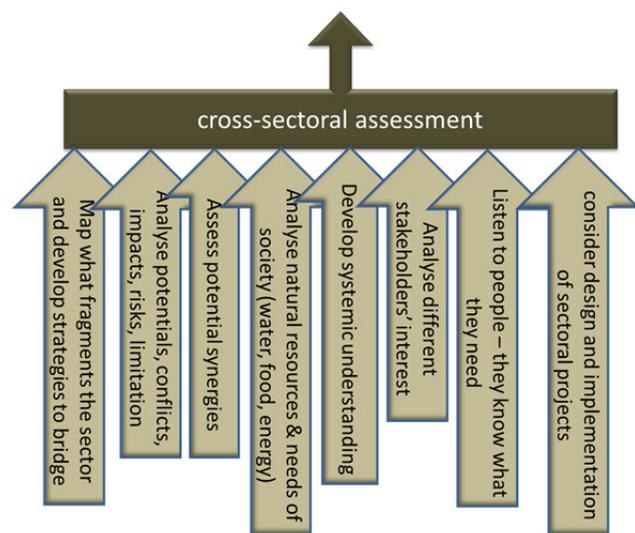
One of the recommendations is related to the different roles the participants have in their daily work: the **individual can be a vector of change**; some have more influence on implementation level in the context of their projects, others more on “global policies” (formulation of SDGs). Both levels are considered important for awareness rising on the Nexus approach and any opportunity to promote it should be seized. In this context, high importance should be paid not only to facilitation of **donor harmonisation** but also to a strong(er) focus on **local governments**. Donor agencies and their structures are only temporarily in a country, hence national structures need to be strengthened. Finally, to establish a common ground, **like-minded people, rotation between sectors, more transdisciplinary knowledge sharing** (bringing local peoples’ knowledge first), a **common language** and an **exchange platform** are required.



Adaptive management: Adaptive management can be understood as **internal and/or external** management of organisations. Thus, donor harmonisation can be part of the “adaptive management”, meaning a management decision can be taken on closer cooperation with certain other organisations or institutions. The general recommendation was given to **create more “space”** (within organisations, but also between organisations) to continue the exchange which started during the AGUASAN workshop. This “space” is required to

transform “big dreams into concrete actions”. The basis for an adaptive management suitable to develop more Nexus-oriented work includes longer-term interventions (more time and energy), a sequenced planning and institutional flexibility also allowing for re-adjustments.

Cross-sectoral assessment: Such an assessment is one of the first steps required to better understand the status quo and to define future actions. The application of a Nexus approach necessarily has to be based on a **needs and resources** assessment, an understanding of **on-going projects and programs** and a comprehensive analysis of **potential synergies**. An analysis and evaluation on **existing institutions**, their interests and options to link their activities, has to be part of the assessment. In many countries the variety of stakeholders (besides governmental ones) is continuously increasing, including humanitarian aid, private sector, development aid, foundations, etc. and all of them are taking influence and have to be considered. Since Nexus is closely related to **resource allocation**, the **power (of decision)** of different local and international institutions at different levels has to be understood. Limited available resources being often a serious source of conflicts, imbalance of power between different stakeholders (at different levels) can be crucial. A mapping of “**what fragments the sector**” and to develop strategies to bridge such difficulties should be part of the work. For the needs and resources assessment it is not sufficient to put the water cycle in the centre of interest, because **other cycles** (carbon, water, energy, nutrients, etc.) are equally important.

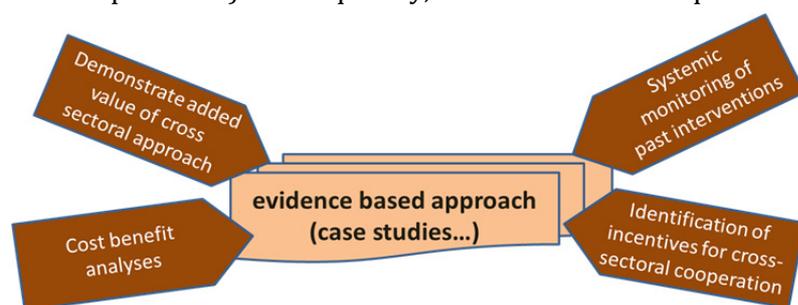


Entry points: Possible entry points can be on project or on policy level, but in any case the principle of “**starting with low hanging fruits**” is a general recommendation the participants agreed upon. Approaching Nexus topics, which are / look feasible in the respective context, allows developing further success stories which are finally needed to provide evidence on the usefulness of the approach. Taking the **user perspective** is also considered as good entry point, because it directs the focus on what is most needed, e.g. to create a link between drinking and irrigation water in the Fergana Valley example. Although a cross-sectoral resource assessment is expected to provide a number of important facts and insights about “the possible”, politicians often do not take action based on data but rather on interests. Therefore, besides pure data collection, a **definition of common interests** which can bring stakeholders together has to be thought of. **Conflict management** can also be an entry point. In conflicting situations, as presented in the Fergana Valley case, a Nexus ap-

proach can be understood as **internal and/or external** management of organisations. Thus, donor harmonisation can be part of the “adaptive management”, meaning a management decision can be taken on closer cooperation with certain other organisations or institutions. The general recommendation was given to **create more “space”** (within organisations, but also between organisations) to continue the exchange which started during the AGUASAN workshop. This “space” is required to

proach can contribute to resolve resource allocation problems. Assessing synergies can open up new solutions. In that sense, Nexus can contribute to conflict management and conflict management can become crucial for Nexus application. While looking for entry points, in some cases it will be easier to **start with one topic and keep others and their interlinkages in mind**. Meaning, not all Nexus topics (water-food-energy) can be addressed from the very beginning.

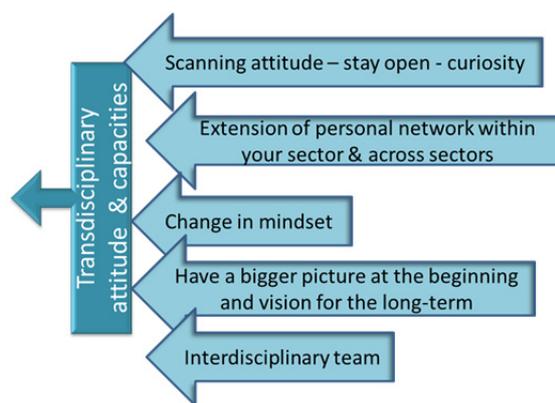
Evidence based approach: Most participants expressed their discontent about the **lack of sufficient evidence** to provide proof on the added value of Nexus. Much more case studies, facts, cost benefit analyses, etc. would be required. More practical examples would help to define a clearer “pathway” on how to bring sectors together. It has to be clarified what is the difference between the Nexus approach and integrated resources management, and what added value it provides compared to such (former) integrated approaches. Good Nexus case studies must show what the **implications of the new perspective** are and its impacts on project planning and implementation. While the link between water and food security is felt to be already well developing, this seems to be not the case for **energy which is neglected** (from the point of view of mainly WASH specialists). Consequently, more evidence is required on how to link both – water and food



security – with the energy topic. Besides good practice examples also awareness creation is important. Finally, it is imperative to understand what **incentives** are required and effective to promote cross-sectoral cooperation and application of a Nexus approach.

Transdisciplinary attitude & capacities: Transdisciplinary thinking needs some courage to leave familiar fields of work and processes. Normally “people **feel more secure** if there are walls” and problems are somehow limited and manageable. Opening up for other sectors at the first glance makes things more complicated, which may be a reason why we think in boxes. The so-called “human factor” has to be considered and every individual must critically ask himself / herself why we shrink from transdisciplinary learning and working. **Interdisciplinary teams** significantly facilitate the development of transdisciplinary attitude and capacities.

On the other hand, the experience in the group dealing with the Indonesia case study showed big interest of WASH experts in the energy topic and the resource person felt inspired by this experience. In addition, it was found that finally many problems are similar in different sectors. Often it is more the **system approach and understanding of linkages** which are important rather than technical details. So, transdisciplinary learning does not pose an insurmountable problem. A concrete proposal relates to improving the SDC **knowledge sharing in the regions**, closer cooperation between thematic networks and other networks - meaning the global programs should be better linked to existing networks in order to also contribute to the dissemination of a Nexus approach.



Capacity building on integrated approaches (and thus also on Nexus) is **needed at ALL levels**. The Nepal case study made this very clear; an integrated approach which works out well on a project level and which is now to be scaled-up nationwide might suffer the loss of quality, especially its participatory elements, if not all involved stakeholders get a good understanding of the specific features of the approach. Especially **communities** have to be strengthened to better understand what Nexus means. In general, farmers already think in a more integrated way (much more than people at ministries) but they still need more solution oriented know-how and support. Given the fact that no “one fits all” approach exists and not everything can be “scaled-up”, transdisciplinary capacity is required to continuously develop appropriate approaches for different conditions.

The full workshop report can be downloaded at <http://www.aguasan.ch>
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