Summary of Cluster Group Meeting Water in the Landscape, SIWI, 2017-10-06

The SIWI/SWH coordinator of the Cluster Group, Anna Tengberg, opened the meeting and presented the workplan of the network and expected outputs. The workplan includes five thematic meetings on various aspects of water and landscape management that will lead to the development of a popular science report and a policy brief. Other potential outputs include Sida proposals on e.g. International Training Programmes (ITP), information on website, social media, a scientific article, and an event at the next World Water Week. The introduction was followed by three keynote speeches:

Lars Laestadius, SLU - Forest and Landscape Restoration: The new REDD

Restoration is necessary, the question is how and where to do it, and at what scale. An example from Niger highlighted the importance of changes to governance and that restoration can improve livelihoods, provide food, and affect security issues. Another example from Costa Rica demonstrated the role of payment for ecosystem services schemes and introduction of an ecosystem service fee for stopping expansion of harmful land use, in this case cattle ranching. Restoration has also been conducted in Southern Sweden, involving agroforestry where the trees keep nitrogen in the soil, which can decrease the use of fertilizers, which in turn can change agricultural management. Restoration can change the landscape and we need to see the opportunities in a positive way and the potential of what we can do together. Restoration is when one generation leaves the landscape in a better shape to the next generation. Restoration takes decades and there are no such thing as perfect projects, only the need to manage adaptively.

In terms of policy frameworks for restoration, the REDD policy is too weak. By increasing forest in some areas, the decrease of forest in other areas can be balanced out (as for example logging in Brazil). We can create political coalitions and alliances of states in green zones. There are many different forms of restoration and overlapping approaches, such as sustainable land management, ecological restoration, forest landscape restoration, integrated land management, etc. However, the guiding principles of Forest and Landscape restoration entail the following:

- Adapt to context
- Involve all stakeholders
- Allow for multiple benefits
- Learn as you go
- Restore eco-functionality
- Focus on landscapes
- Avoid interfering with natural grasslands
- Create a mosaic type of restoration (which might be difficult/challenging from administrative perspective).

Most of the restorations follows the mosaic method (74%) as there are people living in most landscapes.

There are ambitious targets for land under restoration, such as the Bonn challenge: 150 million ha under restoration by 2020. It was followed by the New York declaration with a goal of 350 million ha under restoration by 2030. These are voluntary commitments and by 2017, there are 156 ha committed to restoration (i.e. statements of political engagement), mostly by countries from the South that are so far leading the process. There should be more countries committing from the North as well. However, the question is how to move from commitment to action. Every country need to think about this, as contexts vary, and there is a need to find context specific solutions.

Question: How do you see food and agriculture in landscape restoration? Land can be used for several purposes at the same time that do not need to contradict and be in competition with each other. We need to find ways to bring them together.

Kevin Bishop, SLU - Need for capacity building in hydrology

It is very hard to know how and where water is moving, but it is really important as it differs in different contexts. Forests + Flow regime = complexity. Hydrology is fundamental for restoration of productive landscapes.

An example: If you pour water over a flower, how will it move? Where will it go? Some of the water will go to the soil, roots of the plant, but the roots will eventually die, what happens then? We build dams to control the water, but we need to understand the way of the water to avoid making mistakes.

Hydrological cycles can be different, depending on what components are considered, such as people, industries, agriculture, etc. A lot of times those aspects are not included when the hydrological cycle is described. We need to understand that, to understand the watershed balance and where the water comes from. And the question is, where does the water actually come from, as water knows no boundaries. For example, rainforest loss in one country/area can decrease rainfall in other regions (Line Gordon at SRC does research on this).

Evapotranspiration is a very important component. In Sweden we have calculations and data on runoff and water flows, but not everyone has that (for example not Finland). There are different systems to measure those things, for example, in Ethiopia they have standard automated rain gauges, which can improve local weather predictions.

In conclusion, more resources are needed to improve the basic understanding of how water moves in landscapes. More capacity in the field is required as well as more trained hydrologists, especially in the South.

Jennie Barron, SLU – The hydrological challenges in the landscape, with a focus on Africa

Big and rapid changes in how we use water are taking place due to:

- Climate
- Changing diets and increased population.

There is a need to regulate and manage our use of water much more than we are doing today, especially when it comes to agriculture. Water management is critical for tipping points and a threat to people's wellbeing in several places. The climate is changing, for example in Africa there is an increase or decrease in rainfall in many places, and changes in seasons.

People will eat more and different food due to increased wealth. People want to eat more nutritious food, which is often more water demanding, and therefore we need improved management of water, between food (nutrition) security and other purposes, including environmental. More nutritious food requires more water, which also includes fodder, fiber and other biomass. A lot of investments are needed in infrastructure for water use in sustained /increased agriculture.

There is a need for supplementary irrigation or dry-season irrigation in agriculture, but also for ways how to handle too much water and flooding (especially in urban areas). Areas that are cultivated are cultivated more intensively, and provide higher yields per ha (as in South Asia). We need to meet the agricultural water demand, to be able to intensify sustainably especially in Africa. For example, small scale dams that are decentralized, provide better opportunities for irrigation (based on an example from Burkina Faso) and can have little impact on downstream flows. However, there is a lack of data on water flows in productive landscapes. Data on existing irrigation is also very poor and need to be improved. How do we invest in storage of water? We need to make data/information available and undertake analysis of needs.

Elin Weyler, SIWI/SWH – The cluster group on food and water

The cluster group on water and food included a private partnership, working with different companies. They look at certifications and systems used by food companies, and how water is included. It is very difficult and complex to know what works and not. Therefore, on demand from the participants in the cluster group, they are now screening different tools. The group has developed a website - the Water journey, which is based on a stewardship and multi-stakeholder approach. What issues do the certifications pick up on, for example biodiversity, soil etc.? The screening has come down to two different useful tools/standards: SAI FSA and GLOBALG.A.P. Although they still need to develop the water aspect. It is always a challenge when working with self-assessment. Farmers are spending a lot of time on audits and paperwork and there is a need to improve the systems, both for small-scale and large-scale farmers.

The project included different crops and value chains: avocado in South Africa, rice in Cambodia, wine in Portugal, black pepper in India, and asparagus in Peru. A lesson was that not all producers have a background in farming, but rather are entrepreneurs or have a background in business. Some observations to date: Certifications are a lot of times just boxes to tick off, but this is easy for companies to use. Certifications are often used as a "magic bullet", but there is a tiredness of certifications from producers.

Can this cluster group take some inspiration from the food group regarding involvement and collaboration with the private sector, as we want to include them more?

Discussion

Key points from the discussion include:

Integration of water in landscape approaches

- **Forest versus agriculture -** is there a conflict? Not necessarily, just different entry points. Shift from watershed focus to nexus - need to understand different perspectives. And in most degraded landscapes with people, one cannot exclude agriculture and water demand
- **Context specific challenges -** most of the time water is not the primary focus but rather forestry or agriculture. Which approach or perspective should we use? Water is often the most pressing issue and a connecting issue. Suggestion to have an overarching, but context specific, problem formulation as starting point and then structure problems into different groups.
- **Competition for water** - see the landscape as the system boundary and that activities upstream affect water flows/access downstream. There are multiple links between for example water and gender and the effects are also integrated. The challenge is to make people aware that water is a manageable resource - you need to manage it and be aware of its importance.
- **Multifunctional and productive landscapes** are the goal, and sustainable water management is the means to achieve that. Water is a means to an end, as the goal is to feed people and/or ensure that people have access to safe drinking water. Put the problem as the actual starting point and then see how water is necessary to solve the problem. Look at the whole picture through for example a Theory of Change to see how governance, water and other issues are linked. Find ways to value water and see the relevance of it.

Governance

- **Need to focus on governance** from a water perspective and to get forest and land owners interested in the way water moves, and to see the complexity and the whole landscape. There is a toolbox available for this to increase stakeholder engagement. Processes in Sweden could perhaps contribute to other contexts in terms of capacity building/ resources, and building of bridges between academia and practitioners.
- **Governance strategies** to find ways to support "good" transformations should be inclusive. The risk is that water is not given top priority when it comes to landscape approaches. Governance many times mean control, but should provide support and incentives to focus on good factors to improve the situation. But positive incentives for stakeholders or management are not always well understood. Governance is cooperation and conflict. Water is one of the things that connect upstream and downstream activities and links goods and ecosystem services. Water is the key to make the connection, and it can also be connected to conflict and security, and transboundary conflict management.
- **Need to include the people who own the question**, such as LRF, Jordbruksverket (Swedish Board of Agriculture), Länsstyrelser (County Administrative board). Also companies, such as forest companies Stora Enso and Sveaskog should be encouraged to join the cluster group.

Capacity building

- **Educational systems** - do we have the capacity to educate in adaptive management, both for countries in the North and the South? We need to include not only technical expertise, but also tools for behavioral change and social aspects that are closely linked to landscape restoration.
- **There is a lot to learn from countries in the South**, where water issues and especially the lack of water has been given more attention than in Sweden. Working in Africa, the access as well as the need to conserve water. The situation may not be the same in Sweden, as water is considered more at a policy level here. We should focus more on authorities where the main focus is water, rather than were forest is the main focus. There is a need to create more local incentives so communities and local people maintain, for example, local dams, which is a more long-term and sustainable approach.
- **"A guide to the Restoration Opportunities Assessment Methodology (ROAM)"** - published by WRI and IUCN where the focus is on forests, and water is not included. There is a need to write something similar, but with the main focus on water.

Conclusions - moderated by Anders Malmer, SLU, Global

- Can this cluster group contribute to the Bonn challenge - with a focus on water as contribution to good restoration of landscapes? We should try to show how different parts of the landscape are linked - forests, agriculture land, water - and connect the dots.
- What mix of people should we have at our meetings? Today there are many with background in forestry and academia, invite more practitioners and private sector participants. Are there any case studies we could bring in from the industry? Any case studies on climate change and changes over a long time? For example TNC's examples of water funds for restoration, Skogsstyrelsen's Model Forest initiatives, etc.?
- As the lack of data has been discussed, maybe the group should pick that up? The need for better data, could that be included in all themes we will discuss?
- Include governance as a theme. Try to include practical examples and case studies. Prioritize private sector.

The next meeting will be held the first week of December and SIWI/SWH will send out information about the exact date as soon as possible.