Enhancing water productivity by using a “push-pull-policy” approach

Unsustainable use of water is becoming a huge problem. The innovative push-pull-policy approach addresses this issue by involving all stakeholders in promoting better agricultural practices, creating financial incentives to use them and improving governance to sustain them.

By Jens Soth and Christina Blank

Water productivity – or the ratio of agricultural output per unit of water input – is important for increasing food security. More than two-thirds of human water consumption is used for agriculture. As climate change advances, water is becoming a scarce resource, further threatening the already fragile state of agriculture in many countries and creating a growing risk of conflict over rights to water resources. Addressing water issues is thus a key component for achieving sustainable development, reducing hunger while promoting peace and economic well-being.

Helvetas Swiss Intercooperation is the consortium leader of a multi-sectoral group of actors who are rolling out an innovative approach through the Water and Productivity Project (WAPRO, see Box next page). The goal is to address inefficient irrigation practices in smallholder farming. To tackle this problem, the Swiss Agency for Development and Cooperation (SDC) and Helvetas jointly developed the push-pull-policy approach. Actors from the private sector, civil society and standard bodies joined forces to address challenges of water scarcity and sustainable irrigation management. New production and irrigation practices shall allow farmers to maintain or grow their incomes without putting additional strain on local water supplies. The project focuses on rice and cotton, two highly water-intensive crops that play important roles in local food security and economic growth.

While the Sustainable Rice Platform (SRP), the Alliance for Water Stewardship (AWS) and the Better Cotton Initiative (BCI) are project steering partners, providing guidance to farmers on sustainable production and water stewardship, WAPRO’s experience and evidence help the standard revision processes. For example, the project plays an important role in rolling out the new Water Stewardship Principle of the BCI standards globally, and its experience in implementing water stewardship at farmer level is fed into the technical committee of AWS.

The push component – learning

Farmers are the main consumers of global water reserves, but are also among the poorest citizens of the world. Poverty prevents them from accessing water-saving knowledge. Within the push component, they are trained on new sustainable production technologies and water saving methods such as modern irrigation practices, intercropping, soil cover or mulching, laser levelling, water measuring, and others (see Table on page 24). Farmers in Kyrgyzstan and Tajikistan save 30–40 per cent of water by switching to shorter furrows, which

Training on exact water quantity measuring in Tajikistan.

Photo: Muzaffar Ahkmedov
allow for a better balanced water distribution. In addition, diversified crops using water and other resources more efficiently than monoculture crops are promoted. Lentils planted into a rice field are first irrigated by the same water which is used as the last irrigation flow for rice. Results are shared with the national agriculture and water sector actors to encourage the replication of the technology, which has proved successful.

Local circumstances can only lead to different implementing actors in the push component of the push-pull-policy approach. Here, public extension services often have insufficient capacities to implement projects on their own. In this case, the implementing party is either a civil society organisation, a service provider or the private sector itself. Nevertheless, collaboration with public extension services is planned for many sub-projects of the WAPRO project, thereby allowing for a broader outreach of the new technologies introduced. In all sub-projects, the agricultural production of either rice or cotton was linked not only to water saving technologies, but to broader sustainability standards (BCI, SRP, AWS, etc.) as well.

The more traditional push component is important, although more is needed to increase an uptake of improved practices. So how to create incentives and policies to support these practices? This is where the pull and policy components come in.

The pull component – financial benefits

Even among farmers who are aware of water saving methods, only a few end up adopting them. Without financial incentives, they are reluctant to make significant investments of time and money for an environmental benefit only. By promoting methods that not only save water but also increase production, farmers have a financial incentive to save water. In India, for example, the system of rice intensification allowed an increase in crop productivity of 70 per cent compared to traditional methods. Turning pull activities into practice is realised by local value chain actors, who are the responsible purchasing and processing agents within the value chain. These private-sector actors create additional incentive mechanisms for farmers either by offering premium prices for crops produced under sustainability standards, pre-payment of the crop, access to microcredits, and secure access to enhanced markets or integration into agricultural extension programmes (e.g. saving money by using less pesticide). Activities within the pull component consist of the “off-take” of the products produced by the farmers taking part in the training and extension of the push component.

The policy component – governance

A lack of governance in water distribution, maintenance of channel systems and irrigation infrastructure, and timing of irrigation goes beyond the reach of an individual farmer or company. Consequently, farmers often do not apply water-productive technologies and irrigate as much as possible when water is available. The solution is a policy dialogue based on evidence. The local policy component is realised by civil society organisations strengthening the capacities of water user associations in implementing agreed-upon action plans. The activities of the policy component consist of workshops with the farmers, other water users and water management/irrigation authorities by following the guidance outlined in the standard of the AWS. Rather than waiting for top-down policy changes, farmers and other villagers jointly agree on a reasonable way to share water resources and create plans to improve the local water situation. Farmers work with the local authorities to adapt the regulatory frameworks, for example regarding water distribution rights or water payment schemes. For the implementation of the policy component, it is important that the private sector does not try to act either as a convening nor facilitating actor. Such attempts could easily be perceived as influencing local water
distribution, and thus would probably attract a lot of criticism and objections. The external impulse given by the pull of the private sector catalyses local awareness, aiming to achieve behavioural change with regard to a more sustainable water management through the farmers and a better governance through the decision-makers. The governance changes at local level help advance national agriculture, commodity and irrigation reforms and pave the way to scaling up the approaches to other regions.

Advantages for smallholder farmers

The key advantage for smallholders is leveraged by the support of the value chain actors and implementation of a commodity standard that ensures productivity gains, market access and premium prices when producing under sustainability standards. Farmers not only counteract challenges of water scarcity and climate change, but also realise collective action for water governance improvements. Since they are contributing to improvements by changing their production technologies, they justify postulating improvements realised by local irrigation authorities either with regard to the water distribution cycles or via renovation of canal irrigation infrastructures.

Being able to produce under international standards improves market proposition of the agricultural produce next to the direct sustainability standards. Farmers not only alter counteract challenges of water scarcity and climate change, but also realise collective action for water governance improvements. Since they are contributing to improvements by changing their production technologies, they justify postulating improvements realised by local irrigation authorities either with regard to the water distribution cycles or via renovation of canal irrigation infrastructures.

Advantages for the private sector

Many private companies and brands interact with farmers in a value chain activity. Ensuring the future raw material supply with high quality standards, the improvement of the sustainability performance and preventing potential image risks as well as the opportunity to communicate such activities in tangible and comprehensible ways to consumers are key drivers for such types of engagement. Nevertheless the impact is very much restricted to activities that can be rolled out with farmers directly or with farmers’ cooperatives. Addressing the more complex challenge of water governance or even higher levels of water regulations and policies is neither the role nor the qualification of private sector actors. This sphere of action can be added with the policy component of this project approach allowing the private sector to engage in complex fields such as the water sector and its overall management.

Advantages for international donors and the national public sector

International donors – in the case of WAPRO this is SDC – can help to steer the process with particular focus on a systemic change in the policy component. Furthermore, the supporting funds are relevant to “de-risk” the engagement of all parties, since it is unlikely that an individual actor would risk engagement in all components alone. The advantage for the international donor communities is the integration of the private sector into long-term sustainability and development engagements. Thereby the impacts can be leveraged, and the collective understanding of a development agenda increases.

The national public sector, i.e. the government, benefits from the engagement of the international actors and the momentum that is created by combining improved technologies at field level with local policy discussions. In many cases gridlocked discussions can be opened up. Moreover, debating modern technologies and sustainable production methods is encouraged.

Outlook

The push-pull-policy approach is a set-up for future public-private partnerships where public goods (water, forest or communal land are in focus for a more sustainable use, often referred to as a landscape approach) or complex sustainability challenges (land degradation, biodiversity loss and climate change) require concerted efforts of different stakeholders. The clear roles assigned to involved entities and the synergistic effects unlocked by the project components leverage development progress that could not be achieved, if either the push or policy activities were carried out as “stand-alone projects”. Only the close intertwining with the pull of the private sector ensures that the long-term benefits can be perpetuated even after the supporting funds of the public sector have run out. The allocation of responsibilities of the components also allows for an efficient replication of similar projects. Given the time pressure for action in the sustainability challenges, this may be a welcome basis for quantum leaps in the sustainability impact of such projects.

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**The Table shows a selection of new technologies and involved actors (2018-2021).**

<table>
<thead>
<tr>
<th>Country</th>
<th>Value chain</th>
<th>Push actor</th>
<th>Pull partner</th>
<th>Policy partner</th>
<th>New technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>Organic cotton</td>
<td>bioRe Foundation</td>
<td>bioRe and Coop Switzerland</td>
<td>bioRe Foundation</td>
<td>Organic farming, diversification of crop rotations, cultivation of water saving and robust cotton varieties</td>
</tr>
<tr>
<td>India</td>
<td>Organic rice</td>
<td>Partners in Prosperity, Helvetas India</td>
<td>Reismühle Brunnen, Coop Switzerland</td>
<td>Partners in Prosperity</td>
<td>Organic farming, diversification of crop rotation, systems of rice intensification</td>
</tr>
<tr>
<td>India</td>
<td>BCI</td>
<td>Coastal Salinity Prevention Cell, Tata Trusts</td>
<td>BCI</td>
<td>Coastal Salinity Prevention Cell</td>
<td>Alternate furrow irrigation, drip irrigation, reduction of agro-chemicals</td>
</tr>
<tr>
<td>India</td>
<td>SRP</td>
<td>LT Foods Jain Irrigation</td>
<td>Mars Foods (“Uncle Ben’s rice”)</td>
<td>Partners in Prosperity</td>
<td>Drip irrigation, alternate wetting and drying, laser levelling, reduction of agro-chemicals</td>
</tr>
<tr>
<td>Pakistan</td>
<td>SRP</td>
<td>Rice Partners Limited, Galaxy Rice Mills</td>
<td>Mars Foods, Westmill</td>
<td>Helvetas Pakistan</td>
<td>Alternate wetting and drying, laser levelling, reduction of agro-chemicals</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>BCI</td>
<td>Sarob Farmer Cooperative</td>
<td>BCI</td>
<td>Helvetas Tajikistan</td>
<td>Short furrow irriga- tion, fertigation, plastic mulching, reduction of agro-chemicals</td>
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</tbody>
</table>

**Better Cotton Initiative (BCI) Standard**

**Sustainable Rice Platform (SRP) Standard**

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