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# Case studies on Remuneration of Positive Externalities (RPE)/ Payments for Environmental Services (PES)

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Since January 2007, the Swiss Federal Office of Agriculture (FOAG) co-funds projects that contribute to regional development through the successful production and marketing of local agricultural products.

These projects are expected to add value to agricultural activities and strengthen collaboration between agriculture and other economic sectors in the region.

The projects are based on local initiatives and are meant to generate positive externalities by addressing ecological, social and cultural concerns in region. They are part of a coordinated policy effort to promote sustainable regional development in support of land use planning.

## Promotion of Standard Fruits Trees generating numerous ecosystem services and local revenues in the region of Seetal, Switzerland

### Overview

The region of Seetal has a long tradition as fruit producer and its fruit tree landscape represents a very attractive recreational area for the local non-farming population and tourists. The financial support of FOAG ensures that traditional tree fruit varieties combined with the knowledge about the different forms of utilization and processing methods are preserved. These activities represent part of the cultural heritage of the region that is also meant to be imparted to the next generation.

The extensive cultivation methods and the deep root systems of the standard fruit trees contribute to the provision of environmental services by limiting the leaching of nutrients in the regional water ecosystem. At the same time, the additional revenues generated from the harvested fruits and tourism ensures that local farmers have an interest in preserving the extensive cultivation system. The standard fruit tree gardens combined with the surrounding extensively managed grasslands also provide a home and fodder for numerous animal and insect species. Among them are also some endangered species such as the common redstart, the treecreeper and the little owl. The project is also embedded in public efforts to improve the interconnectedness of valuable biodiversity habitats. Such projects to promote interconnectedness (Vernetzungsprojekte) receive additional support through a particular type of eco-payment.

The public financial support for the Hochstamm Seetal project amounted to CHF 4.6 Million investments (US\$ 5 Million) over five years, mainly to create the entrepreneurial infrastructure that would allow the project to continue beyond the initial funding period. The cost of infrastructures of the HSAG company are partially covered by the Federal State (35%) and the two cantons (together 30%). The remaining 35% of the costs are covered by the company itself through private equity and the eventual sales of products derived from the project. Projects costs can be divided into investments in product processing and sales capacity, tourist programs, tree nurseries and know-how transfer in the standard fruit tree business. Finally, they also include overall project management and marketing costs for one 5-year periode (duration of the contract).

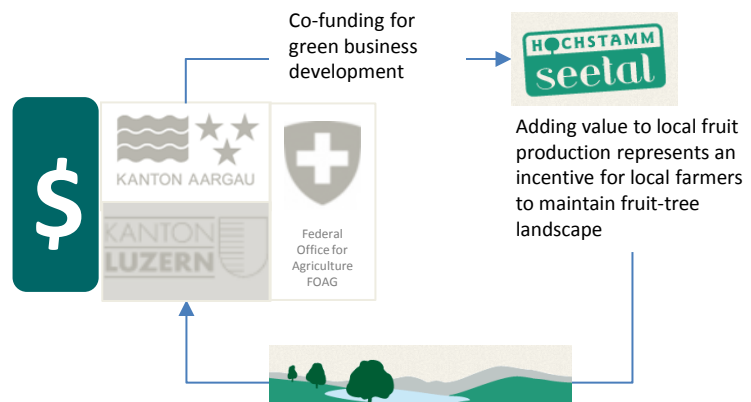


Figure 1: Schematic diagram of the key roles

## Background

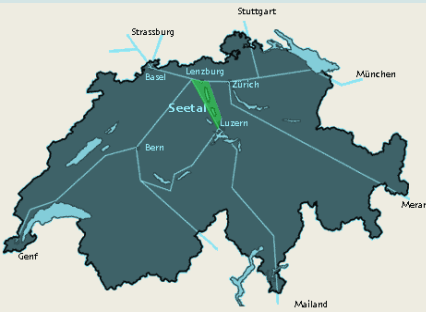


Figure 2: Map of the PRD region Seetal (area in green) within Switzerland

In the course of industrialization and agricultural intensification in the 20th century, small-scale farming in the region of Seetal caused eutrophication of the adjacent Baldegger lake and Hallwiler lake due to overfertilization. The consequences were rapid growth of algae using up the available oxygen in the water, which again resulted in fish dying in the lakes. In the 1980s policy measures were taken to reduce the effluence of phosphorus. They consisted of limiting the number of livestock and the construction of water cleaning stations. Supported by extension services and incentive-based payments offered by the Federal State and the cantons, farmers managed to significantly reduce nutrient leaching. In addition to that, the lakes receive artificial ventilation since the early 1980s. This has led to the return of aquatic life and a reduction of phosphorus values in water down to a natural level.

Alas, the number of the standard-fruit tree gardens, which are very important from an agro-ecological point of view, have continuously decreased due to reasons of economic change and the rise in labor costs in agriculture. Moreover many of the existing fruit trees were affected by fire blight, a bacterial disease and many had to be cut down as a consequence. The logged areas tended to be re-used for more intensive farming and this again increased the risk of nutrient leaching.

Local fruit-tree farmers felt the need for action in 2005 when a merger of companies led to the announced retreat of one of the largest cider processors in the region. In response to these changes, farmers created the cooperative of standard fruit-tree producers (Interessengemeinschaft Hochstamm), which is nowadays called “friends of standard fruit trees” (Hochstamm Freunde). The purpose of the project was the revival of the cultivation of standard fruit trees. At the same time, the Swiss parliament passed a new legal framework within an agriculture reform (Agrarpolitik 2007) to promote structural improvements in agriculture. This included projects in support of regional development and the promotion of local products from the region (Art. 93 Abs.1 Bst. c LwG, agriculture act). The purpose was to strengthen the regional approach of Swiss agricultural policy as well as the role of agriculture in the development of rural areas through projects for regional development (PRD).

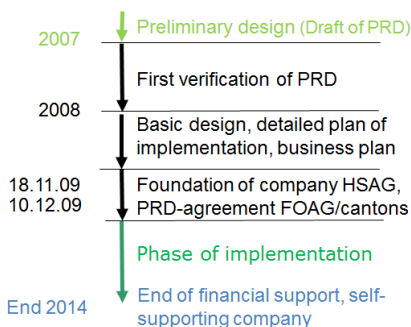
The project idea to promote standard fruit trees in the Seetal region was submitted as a project proposal to FOAG in May 2007 (see figure 2). Based on a subsequent detailed business plan, an agreement of project co-financing was signed by the federal state, the involved cantons Aargau and Lucerne and the company HSAG, the project leader. The start-up capital for the phase of implementation was provided for the first five years until end of December 2014. The decision of the public sector to support the project was linked to the natural attractiveness of the region and its relative economic disadvantages (being by-passed by the major north-south traffic routes in Switzerland). The project area, which consists of around 75'000 standard fruit trees, is located between two lakes (Baldeggersee and Hallwilersee) in central Switzerland and is divided between the part that belongs to the canton of Aargau and the part that belongs to the canton of Lucerne.

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Figure 3: historical milestones of the standard fruit tree PRD in the Swiss region Seetal.



### History



## The environmental service

*The environmental services provided in the project:* Standard fruit trees have a long history in shaping the landscape of certain regions in Switzerland. They are an expression of traditional agricultural farming practices and provide nature-oriented and ecologically valuable habitats, especially for birds. Various policy areas in Switzerland aim at maintaining the value of such landscapes (regulation related to the protection of nature/water resources, soil conservation, land-use planning, the promotion of sustainable regional development and agriculture).

The promotion of a PRD such as Hochstamm Seetal AG is able to address numerous environmental, economic and social concerns regarding regional development and thus improve coordination among the different policy institutions with jurisdictional claims in the monitoring and enforcement of environmental regulations, and harmonise actions with regard to a common goal. In this context, Swiss agricultural policy plays a crucial role because it combines policy instruments to promote rural development, to remunerate contributions to the sustainable management of public goods (e.g. biodiversity) and to help integrate local agricultural products into the food value chain. The FOAG also supports public advisory services in agriculture and specific programs for the conservation of plant genetic resources in food and agriculture. All these components are crucial for sustainable agriculture and rural development in Switzerland.

In the context of the PRD Hochstamm Seetal AG, FOAG provides financial support for the first five years of the project. This support is designed to cover upfront investments required for the creation of a corporate governance structure, as well as the successful marketing and value chain integration of a broad product line. It illustrates how entrepreneurship and innovation are integrated into a broader concept of Payments for Environmental Services (PES).

The Swiss parliament has recognized the value of doing so with the agricultural policy framework 2007 (Agrarpolitik 2007) that considers the support for local entrepreneurial initiatives to be part of a comprehensive strategy to promote regional development through investments in the marketing and sale of local agricultural products (promoted through PRD). The supported projects also relate to other regional instruments to promote structural change. It's in its design similar to the second pillar of the EU's Common Agricultural Policy (GAP) to promote infrastructure development in rural areas.



*The promotion of standard fruits trees in the region of Seetal, comprising parts of the cantons of Aargau (AG) and Lucerne (LU) in Switzerland, represent a project for regional development (PRD, Projekte fuer die Regionale Entwicklung, PRE) with multiple positive externalities for the region and its natural environment (see location in the map). The PRD started with the registration of the "Projekt Hochstamm Seetal" (Project "Standard Fruit Trees Seetal") as a company called HSAG (Hochstamm Seetal AG).*



*It received its start-up capital end of 2009, when it successful applied for financial support with FOAG. Its business plan was designed to generate revenues from the sustainable management of standard fruit trees in Seetal.*

*Picture : The landscape of the region Seetal dominated by the standart fruit trees the hills and the two lakes (Hallwilersee and Baldergersee).*

## Funding Mechanism

The Swiss federal government supports the preservation of standard-fruit trees with special direct payments. Despite these efforts, numerous fruit tree gardens are no more taken care of because the costs of managing and preserving these ecologically valuable trees far exceed the revenues farmers can generate from the sale of the harvested fruits. Apart from the direct payments, the price of cider and other fruit juices is also relevant for the farmer and opportunities to obtain a premium product price due to a local value added are an attractive business for local producers. This however requires investment in technology, value chain integration and professional marketing of local products (e.g. local product processing and packaging).

Lots of Swiss consumers value the preservation of standard fruit trees for their ecological value and their contribution to landscape beauty. They trigger positive emotions about farmed landscapes in harmony with the local environment and biodiversity. Consequently, one of the goals of the fruit-tree farmers in Seetal is to monetarize this emotionally positive valuation of consumers by creating added-value products that consumers identify with the region and its qualities. FOAG and the cantons found the project idea worth supporting especially in view of its potential contribution to regional development and the generation of added value through agricultural activities in the rural economy.

With the start-up financing for projects for regional development (PRD) the federal state and the cantons offer the region and its farmers a help for self-help (Hilfe zur Selbsthilfe). The purpose of this PRD is the creation of an added-value market for local goods. A condition to obtain funding from PRD is to set up a private legal entity, founded and owned by the involved local farmers, responsible for project implementation. In the present project, an incorporated company was created by the local fruit tree farmers called 'Aktiengesellschaft Hochstamm Seetal AG' (HSAG).

The equity capital of the company amounts to CHF 270'000 (US\$ 282'000) and corporate governance consists of the following institutions and positions:

- The single shareholders (Einzelaktionäre), the friends of standard-fruit trees (Hochstamm Freunde) and a regional ecologically orientated association (Natur und Markt Seetal) are the owners and supervisors of the company;
- A supervisory board (Verwaltungsrat) of seven people (three of them are farmers) makes the strategic decisions of the company;
- A full-time executive director runs and executes the daily business. He coordinates the collaboration between the different actors involved consisting of private organisations (HSAG, processors, agro-tourism operators etc), the federal state and the cantons.

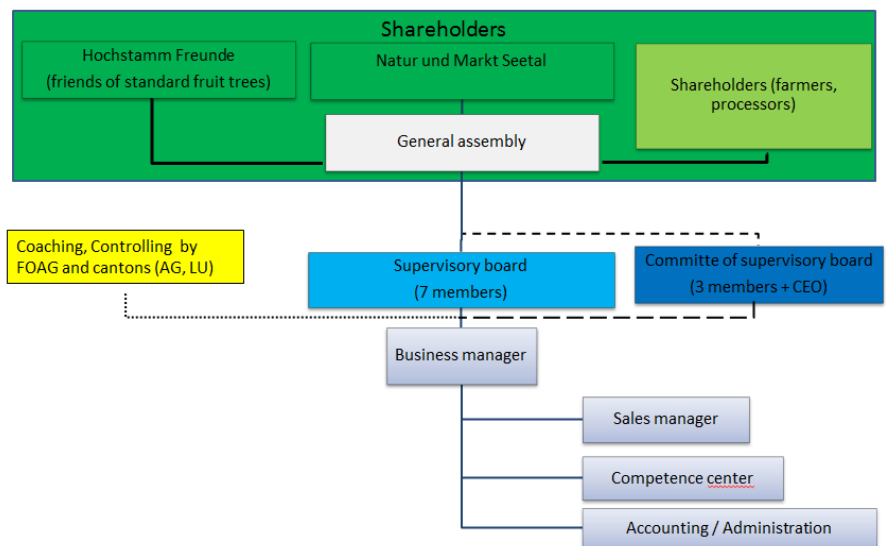


Figure 5. Corporate Governance of the company Hochstamm Seetal AG (HSAG).

## The role of the private sector

The Federal State and the cantons help finance HSAG in return for the company to meet the common objectives set out at the beginning of the PRE. Funding supports consists of special payments for the environmental services that are generated through the cultivation of standard fruit trees as well as PRD investment support for farmers to enhance the value added of its produce. However, it does not include support for farmer contracts with tourism operators. There is instead support for licensing contracts with local cider producers related to the use of the trademark “PRE Hochstamm Seetal”.

With regard to the market for environmental services, it is thus the public sector (Federal State, cantons) as well as the shareholders of the incorporated company that provide funding and help to mediate between the providers/sellers of environmental services (fruit-tree farmers who preserve the natural beauty of the landscape, water quality and biodiversity) and the beneficiaries/buyers of environmental services (public at large, consisting of taxpayers, tourists and consumers who value the public goods provided by the project).

*The role of the public sector:* within the Swiss system of agricultural direct payments, the sustainable cultivation of standard fruit trees is remunerated for the positive externalities it generates in terms of water quality, soil conservation, biodiversity and landscape beauty. Compliance with the performance and sustainability criteria are documented in interim and final reports and examined through detailed controlling. Within the joint framework of promoting sustainable structural change in agriculture, the federal state and the canton coach the project from the pre-proposal stage to the actual implementation. In order to ensure that the public services are delivered, the involved public sector institutions provide general guidelines and working instructions for a comprehensive project controlling, monitoring and evaluation. While the canton exerts its indirect control on site, the federal state is in charge of the overall supervision of the project.

*The role of the business manager of HSAG:* the business manager primarily consists of a fully employed executive director who is in charge of the overall success of the marketing of local products derived from the fruit trees. The executive director has to ensure that farmers produce a certain quality - a condition for the successful marketing of the local product. In order to ultimately obtain a premium price for the niche product, the business manager must also ensure that the packaging and overall presentation to the consumer reflects the regional identity and quality of the Seetal fruit trees. E.g. the fruit juices produced from the local fruit trees is not based on concentrate but freshly pressed from the local fruits. The product line comprises 30 different products in the premium segment. The turnover of the sold products could be quadrupled in 2012 to CHF 0.25 Mio. (0.26 Mio. \$).



Picture 6: The products sold under the trademark “PRE Hochstamm Seetal”

## Lessons learned

There are several lessons to be learned from the Hochstamm Seetal Project co-funded by the FOAG and the cantons of Aargau and Lucerne. First of all, the opportunity to generate added value from homegrown local products motivates farmers to take better care of their fruit-tree landscapes and to acquire skills related to quality production and marketing. On the other hand, falling prices for fruits due to the cheaper fruit imports from abroad but also surplus production in the protected domestic market constitute a potential challenge for the long-term economic viability of the project (once public project support would be withdrawn).

A controlling system has been put in place by the Federal State and the cantons that ensures compliance in the PRD 'Hochstamm Seetal', documented in interim and final reports. Due to the limited amount of human resources, monitoring, reporting and verification (MRV) measures are managed by GIS systems and contain sufficient flexibility for subsequent changes in framework conditions.

On the side of the private sector, a successful integration of the PRD 'Hochstamm Seetal' into the local economy has been achieved. Licensing contracts with local fruit processors have been signed and led to successful public-private partnerships. Overall, the PRD enabled farmers to become active players not just in the production of fruits and related marketing strategies but also in the management and conservation of the local cultural and agro-ecological value of the landscape. It shows that the promotion of entrepreneurship and innovation can be well combined with the generation of positive externalities in agriculture. All that is required from the public sector is guidance, know-how and starting capital in the initial phase of the project. This investment support provides the foundation for a flourishing and sustainable local business venture in agriculture.

So far Hochstamm Seetal AG (HSGA) proved to be a good investment because it has positioned itself well in the niche market for local fruits and fruit juices. Thanks to well a functioning executive management, active farmer participation and a professional business manager, the company seems to be well-prepared for the future. The three-year experience in this PRD also shows that the objective of creating a self-sustaining farmer organization is a great challenge and a five year funding period is a short time to achieve that target. Efforts are already being undertaken to ensure funding after this initial funding period through collaboration with other PRDs, the creation of new PRDs and support from foundations. The year 2013 will show whether the goal to increase product sales will be realized and thus further contribute to the financial sustainability of the project. Currently ( March 2013) are 12 PRD on stage of implementation. 19 projects are in the basic stage and 35 projects are on stage of preliminary design.



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