

Economic and Social Revival of a Degraded Region in Serbia

Authors: Zlatic, Miodrag, and Vukelic, Gordana

Source: Mountain Research and Development, 22(1) : 26-28

Published By: International Mountain Society

URL: [https://doi.org/10.1659/0276-4741\(2002\)022\[0026:EASROA\]2.0.CO;2](https://doi.org/10.1659/0276-4741(2002)022[0026:EASROA]2.0.CO;2)

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Miodrag Zlatic
Gordana Vukelic

Economic and Social Revival of a Degraded Region in Serbia

The Result of a Cooperative Venture

26



Approximately 70% of Serbia consists of rolling, hilly and mountainous regions that are prone to erosion. Other natural factors, such as an unstable geological basis, intense rainfall, and poor vegetation cover also contribute to this predisposition to erosion. But the principal factor in accelerated erosion is human activity. The period up to the mid-1950s was characterized by great agrarian pressures and the resulting accelerated erosion. This was followed by rural depopulation and changes in the structure of agricultural production. As younger household members migrated, arable fields were left uncultivated, were invaded by weeds, and were then converted into pastures. Out-migration thus led to reduced pressure on the land, which contributed to diminishing erosion.

But this cannot be called development. The revival of degraded regions should be based on people remaining in the area and being able to have decent livelihoods. Sustainable land use can make this possible, as illustrated by the example of the cooperative venture involving the Porecje Company and local farmers in the Porecje region. This venture involves cooperation between farmers and the company, reducing erosion by establishing terraces on steep slopes, improving soil characteristics, and promoting profitable fruit production. Land resources and environmental values are thus preserved without jeopardizing the profitability necessary to keep people in the region.



FIGURE 1 Conversion of unused and erosion-prone land into productive cherry and other orchards. (Photo by Miodrag Zlatic, 2001)

Forty years of success

The Porecje region has numerous streams and small rivers (*“porecje”*) flowing into the Veternica, which itself flows into the South Morava River. It is situated on the slopes of Mt Kukavica in southern Serbia, one of the areas of Europe most endan-

gered by erosion in the mid-1950s. Concrete efforts to stop erosion and restore productivity began in the 1960s. Initial measures were limited to erosion control and the establishment of some orchards. Efforts were then extended to providing income opportunities for the younger generation, informing the local communi-

ty, and involving them in development processes. Later, in 1978 in the Slavujevce area and in 1991 in the Igriste area, further local efforts focused on using the exceptionally suitable natural conditions for fruit production and more terraces and orchards were established (Figure 1).

The history of the Porecje Company dates back to when the Bora Stankovic Agricultural Compound was established in 1961, with 21 employees involved in primary agricultural production. This small agricultural cooperative farm expanded rapidly. In only a few years, some 250 ha of shrubs and meadows were turned into plantations. Today the Porecje Company owns 1000 ha of modern orchards and 50 ha of quality land for the production of orchard seedlings. Moreover, contract farmers own 2645 ha of planted orchards. In addition to 600 permanent employees, another 1000 workers are contracted for seasonal work. Annual production of seedlings averaged 2.2 million pieces prior to the international sanctions imposed on Yugoslavia in 1992, sold both to contract farmers and in the market.

Capital ownership is joint stock, meaning that the owners are majority stakeholders. The company is primarily engaged in fruit growing and seedling production, hot and cold processing of fruit, and marketing, both domestic and abroad. Producers (farmers) join the company spontaneously, in a form of cooperation that serves the common interests of all participants in the business.

A major technological effort

The technological conquest of the slopes of Kukavica at Igriste was hailed as “a great undertaking” by experts. Land at an altitude of about 600 m had not been suitably cultivated for a long time, and machinery had not been employed because it was too expensive. The Porecje Company collaborated with other firms in the region, who also supplied machinery.

Small plots were grouped and rearranged into fruit plantations. In order to conserve soil and water, the steep slopes of Mt Kukavica were converted into terraces, using level or nearly level bench terraces supported by steep risers. The risers

FIGURE 2 The “Feat of the Century”: heavy machinery prepares terraces on the steep slopes of Mt Kukavica. (Photo courtesy of Porecje Company)



are made of earth protected with grass banks. Heavy machinery was and is still used to begin with (Figure 2). Orchards are seeded in 1 row per terrace. Expenses for terracing and plantations are distributed over the entire period of exploitation; the costs of terracing and establishing the first orchards in the 1960s have now been paid off. Today these sunny slopes are modern plantations.

Organizational measures

A cooperative encompassing private farmers and the Porecje Company regulates cooperation between both parties regarding the establishment of orchards and the production, processing, and sale of fruit products. Today, the cooperative has the following rules and activities:

- The territory on which structural, vegetation, and agricultural measures were taken is the private property of farmers. Some farmers offered their land to the enterprise and asked for land at new localities. Individuals also entered into joint ventures, leasing their land to the enterprise and retaining an interest through partnership.
- The cooperative operates on the basis of a percentage of contracted business

FIGURE 3 Fish farming: an additional advantage of the construction of reservoirs used for irrigation. (Photo courtesy of Porecje Company)



that benefits both the farmers and the enterprise. It simultaneously performs tasks unrelated to farmers or to the company (eg, purchase of mushrooms, medicinal plants). Everything is evaluated in monetary terms, with the difference in the benefit–cost ratio paid to the producer.

- The cooperative regulates farmers' business activities on the basis of incentives such as vegetable growing and consulting services and the efficient purchase of seeds, fertilizers, oil, pesticides, nursery stock, and seedlings for fruit plantations. These incentives promote faster, easier, and better organized production, product sales, and cash flow.
- In addition to constructing terraces and providing incentives for farmers, the Porecje Company markets end products and provides short-term credit. Safe marketing was facilitated during the period of international sanctions. Prices were not guaranteed, but farmers knew where they could safely sell their products, which were aimed at the local and national markets. Thus, Porecje products played a role in sustaining and revitalizing the local population during the period sanctions were in effect.

Impacts and results

The relationship between individual producers and the firm is generally good. The Porecje Company and the farmers have a mutual interest in the cooperative because the land has been converted to organized agricultural production. Plantation orchards are established on previously inadequately used land. But land tenure issues are not sufficiently documented (eg, not enough information on leasing land for joint ventures and on transfer of property); moreover, services (eg, mechanization) are not all integrated.

However, cooperation allows the farmers and the enterprise to realize a benefit–cost ratio amounting to 1.15 to 1.20. The annual crop yield of the plantations amounts to some 100,000 tons of quality fruits: sour cherry, cherry, plum, peach, apple, pear, raspberry, strawberry. There is a highly developed program for produc-

ing frozen fruits, processed fruit products, and especially brandy (Williams pear brandy, apricot brandy, kirsch sour cherry brandy, plum brandy). About 80% of the products were exported to the world market. In the period prior to economic sanctions, the value of annual production was US\$ 35 million. The sanctions against Yugoslavia were instituted in 1992 and partially lifted in 2001. Exports are reviving slowly, as some sanctions are still in place.

The Porecje Company gives special attention to the overall development of the village of Vucje, where the head office of the company is located. The development of the company and the cooperative stimulated the revival of the village. Many contract farmers have modern, comfortable houses with standards that frequently exceed those in developed urban areas.

Further strategies and lessons learned

The construction of small reservoirs at Presecina (170,000 m³), Beli Potok (40,000 m³), Slavujevac (160,000 m³), and Sisine (25,000 m³) opened up new development prospects for the Porecje Company. The overall volume of these reservoirs allows 70% of all the land under fruit seedlings to be irrigated. The company development strategy is based on complementarity with other agricultural branches, such as fish farming. The construction of reservoirs makes fish farming possible, especially carp farming. Small reservoirs allow for easy control of fish feeding and fattening (Figure 3).

The main lesson learned in Porecje is that farmers and enterprises can cooperate through a joint venture in mutual investment and production, while taking care to conserve natural resources and protect the environment. The cooperative makes things easier both for the enterprise and the farmer because the financing of inputs is shared. This facilitates the organization of production lines. Farmers have short-term credit and reliable customers. The company's interest in the cooperative is based on the stable provision of raw materials for the processing capacities of the enterprise, which cannot be covered by its own crop production.

AUTHORS

Miodrag Zlatic

Faculty of Forestry, Department for Erosion and Torrent Control, University of Belgrade, Kneza Visislava 1, 11030 Belgrade, Yugoslavia.
mizlatic@eunet.yu

Miodrag Zlatic is an associate professor of Watershed Management Economics. He also works on projects concerned with sustainable soil management and public participation in environmental decision making. In addition, he is the coordinator of the new WOCAT initiative in Yugoslavia and the SEE countries.

Gordana Vukelic

Agricultural Faculty, Institute for Agriculture Economics, Nemanjina 6, 11060 Belgrade-Zemun, Yugoslavia.

Gordana Vukelic is an assistant professor of Agriculture Economics at the Belgrade Agricultural Faculty. She also works in the field of agricultural production assessment in the social and private sectors.