



## *Series 6: Programme 6 (of 10) - 'Shed Loads'*

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### **What is a watershed?**

A watershed is a geographic area whose rainfall and snow, streams and rivers, all flow or drain into a specific body of water, like a reservoir, river or lake. In some countries the words 'catchment' or 'river basin' are used instead of watershed. Most people immediately think of the surface water that exists within a watershed, but in many countries there are also important underground sources of water that may or may not be related to the surface water.

### **Threats to Watersheds**

Both land and water are scarce resources. It is estimated that by 2025, almost half the world's population will live in conditions of severe water stress. Similarly, land is continuously being cleared for settlement, cultivation and/or for timber production. During the 1990s it was estimated that 15 million hectares (37 million acres) of forest cover were lost annually.

Within any watershed, large or small, there is a complex relationship between the way the land is used and either the surface or ground water. Therefore changes in the way land is used in the upstream areas of a watershed can have a significant impact on downstream water users. For example, if farmers start using increased levels of fertilisers or pesticides these can enter the streams and rivers. Some of the pollutants may eventually end up contaminating the water supply of people. Clearing land of its natural vegetation might cause increased erosion, with the silt being deposited in the dams that store the water supplies for urban water users.

There are technological solutions to these problems. Water purification plants can remove most of the harmful chemicals and silt can be dredged from the dams. However these activities do not address the core problem – landuse or agricultural practices higher up in the watersheds.

## **Watershed Management**

Historically the protection of watersheds has been the role of government. However their role in land and natural resource management has changed and continues to change. There is now a greater emphasis on decentralisation of rights and responsibility to land owners and users, and less emphasis on rules and regulations. Simultaneously there is growing interest in the role of incentives for land management. This has led to the development of payments for watershed services. The idea behind payment for watershed services is that downstream users of water can, for example, influence how upstream farmers use their land by creating a payment for agreed practices.

These payments could be structured to encourage farmers to use less chemicals or chemicals that had less effect on the environment. Similarly payments could be used to encourage farmers to restrict their conversion of natural habitat or to rehabilitate important areas such as wetlands.

Interest is growing in opportunities for market mechanisms around watersheds, which would not only protect the environment, but also promote poverty alleviation in both northern and southern countries. For upstream poor communities potential benefits could include increased income, improved diversity of livelihoods, and stronger cooperative institutions. It is often very difficult to establish genuine “win-win” options that both improve the lives of people and secure the natural habitat. Where payments for environmental services are an appropriate conservation tool, every effort should be made to ensure that at the very minimum it does no harm to the local residents. In downstream communities, the benefits might include improved and sustainable water supplies, fewer floods or reduced sediment flows.

Previous experience has shown that participatory approaches to watershed protection can not only ensure the development of appropriate technologies, but also may also strengthen the capacity and self-determination of watershed residents. Co-operation between the parties is the key so that there is equity between supply and demand.

Market based approaches or payments for watershed protection is a relatively new approach to the important issues of land and water management. The case studies shown in this programme illustrate the range and potential of incentives that can be offered for watershed services.

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## Useful Resources

### *Forest Trends*

This site hosts an ecosystems market place

[http://ecosystemmarketplace.net/pages/section\\_landing.news.php](http://ecosystemmarketplace.net/pages/section_landing.news.php)

### *FLAWS*

A monthly email bulletin for facilitators of payments for environmental services

<http://www.flowsonline.net/>

### *RUPES project*

A program for developing mechanisms for rewarding the upland poor in Asia for the environmental services they provide (RUPES).

<http://www.worldagroforestry.org/sea/Networks/RUPES/>

## References

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