Food and Agriculture Organization of the United Nations

Project results: Sri Lanka

KnoWat: Knowing water better

Towards a more equitable and sustainable access to natural resources to achieve food security

Assessing water tenure for food security, equity and climate adaptation

Sri Lanka is an island country in the Indian Ocean with a land area of 65 610 km2 and a population of 21.6 million. It has a network of approximately 103 principal rivers and tributaries, most of which originate in the central and southern parts of the country.

There are three climatic zones in Sri Lanka: the dry zone (annual rainfall less than 1 750 mm), the intermediate zone (annual rainfall 1 750–2 500 mm) and the wet zone (annual rainfall 2 500–4 500 mm). The only source of water is direct rainfall. The biggest user of water is agriculture.

Agriculture contributed around eight percent to national GDP in 2020. Rice is the most important crop, producing 4.1 million tonnes in 2019–2020, enough to feed the entire population of the country. Paddy is grown all over the country, mainly during two monsoon seasons, the Maha season from September to March and the Yala season from April to September.

Rice contributes to 1.8 percent of country's GDP and 1.8 million families are engaged in its production. About 983 550 hectares are under paddy, 43 percent of all agriculture lands.

According to the Climate Risk Index 2021, Sri Lanka is the thirtieth most climate-vulnerable country in the world. The country is highly susceptible to extreme weather events such as prolonged droughts. Due to population growth, economic growth and industry-led deterioration of water quality, the competition for water and water scarcity have increased in recent years.

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Assessment methodology

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Getting to know water tenure

Water tenure can be defined as "the relationship, whether legally or customarily defined, between people, as individuals or groups, with respect to water resources" (Hodgson, 2016). Water tenure determines how people obtain rights to water resources, including the rights to access, impound, use and manage water, gain access to information and participate in decisions on water resources management.

To ensure equitable distribution to all legitimate rights holders and to protect natural ecosystems, it is important that existing water tenure arrangements are coherent and all legitimate tenure rights are recognized by national legislation.

Water tenure arrangements can be very complex and vary considerably, including within the same country, influenced by local and social practices, traditions and status, geography, environment and livelihood practices. Different water tenure arrangements may coexist and overlap in the same region, and water tenure holders may be part of more than one water tenure arrangement.

The assessment methodology

The KnoWat project developed a water tenure assessment methodology to identify and analyse the diversity of water tenure arrangements that may exist within a catchment or community. The methodology includes desk research and field data collection as well as capacity building and consultations with decision-makers, national stakeholders and local people that depend on water for their livelihoods. The assessment is carried out by a multidisciplinary team, which includes legal and sociological experts.

It allows the identification and the analysis of water tenure arrangements deriving from different sources, including formal, customary, traditional and indigenous systems. Formal law, often described in terms of 'water rights,' includes permits, licenses, small-scale so-called 'free uses,' concessions, contracts, membership in water users' associations and legal powers conferred on public bodies. Local communities and indigenous peoples that exercise self-governance over natural resources may apply their own rules to the allocation, management, use and protection of water resources. Communities often share resources based on social, cultural or religious norms, some of which may be recognized in formal law.

The assessment methodology follows a six-step approach to categorize water tenure arrangements and determine their perceived security. It also permits the analysis of governance institutions and the identification of potential conflicts and their resolution through the application and revision of legal frameworks and local practices. The methodology allows comparisons between countries and between different regions in the same country while highlighting the specificities of each study area. The analysis provided by the assessment assists policymakers to define and safeguard the rights of all tenure holders and to determine how to safeguard water resources for users, while ensuring food security, livelihoods and the integrity of natural ecosystems.

[1] Hodgson, S. 2016. Exploring the Concept of Water Tenure. FAO Land and Water Discussion Paper 10.

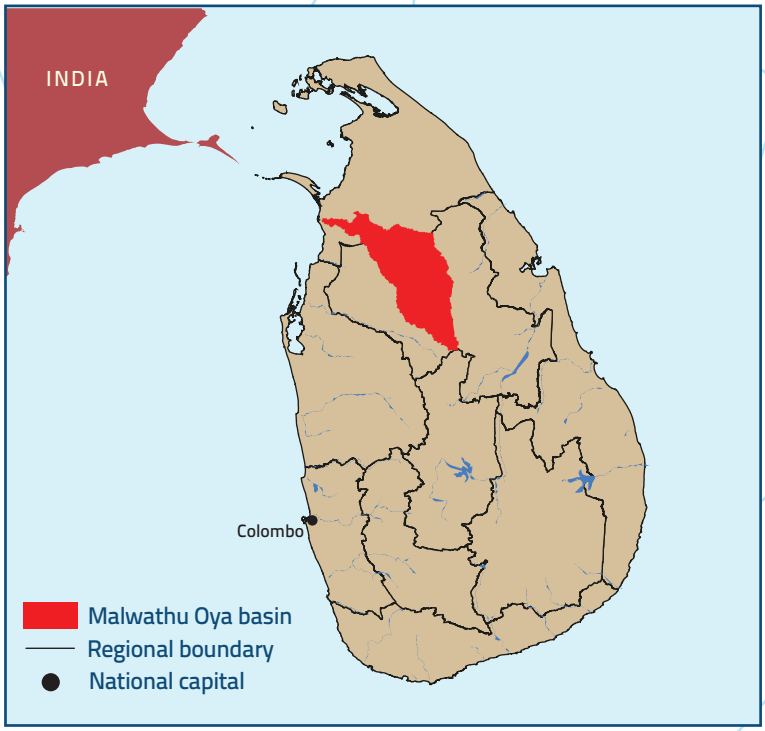
Water tenure assessment in Sri Lanka

The Malwathu Oya river basin is the second largest river basin in Sri Lanka (3 284 km2) and one of the major agricultural areas in the country. The project area, the Malwathu Oya southern catchment, extends over 77 950 hectares. The population in the area has been estimated at 204 775. Agriculture – especially rice farming – is the predominant livelihoods of households, 14 759 of which engage in agriculture.

Sri Lanka currently experiences spatial and temporal water scarcities, and there is an increasing demand and competition for water resources. Water scarcity and the risk of conflicts over sharing water are expected to only increase in future.

The KnoWat assessment identified and compared various water tenure arrangements in the project area, as well as at the national level, and highlighted the threats, issues and conflicts involved.

It provided recommendations for decision-makers on how to achieve more responsible and equitable governance of water tenure. Currently, 52 legislations govern Sri Lanka's overall water sector. Forty state agencies housed in various line ministries are involved in administering water resources and addressing challenges related to water resources.



Assessment area: Malwathu Oya basin

Source: United Nations Geospatial. 2020. Map geodata [shapefiles]. New York, USA, United Nations, modified by the author. Lakes and rivers data from Natural Earth Data and catchment data from Hydrosheds.

Key recommendations for the responsible governance of water resources tenure

- **Improve the management of irrigation water**, particularly monitoring the provision of irrigation water to calculate the exact and adequate amount of water needed for paddy. This is important since irrigation is the main water user.
- **Bring all water sector institutions under one umbrella** to simplify collective and inclusive planning, reduce costs and speed up decision-making in the water sector.
- **Establish an overarching policy to govern the water sector** and an appropriate governance structure for basin management .
- **Implement existing rules and regulations to control illegal and unregulated water use** and reduce water-related conflicts between water users and tenure regimes.
- **Streamline water sector laws and have a separate water law for the country.** Most water laws are out of date and responsibilities are spread out among large number of agencies. There is also overlap, with some water sector government agencies implementing other agency's acts rather than their own.
- **Review the provincial administration layer created by the 13th Amendment of the Constitution**, taking into account the issues between central and provincial government agencies and come up with an acceptable solution to overcome the issues to improve collaboration and coordination, in particular regarding water governance.
- **Improve coordination among existing water sector agencies** by implementing common systems and procedures and encouraging participatory water sector planning.
- **The role of project management committees (PMCs) in water tenure governance and water management should be further strengthened** with a view to providing equitable and sustainable water services for all. Membership of the PMCs should be expanded to include all water sector stakeholders.
- **At the national level, strengthen the water management panel for science-based decision-making** and participatory water management mechanisms.
- **Establish free sharing of data and information** among water users and institutions to enable better decision-making.
- **Introduce modern water tenure arrangements** where possible to minimize water tenure insecurity.

KnoWat: Knowing water better

Towards fairer and more sustainable access to natural resources for greater food security

Rwanda, Senegal and Sri Lanka (2019–2022)

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All around the world, countries are struggling to adapt their agricultural and food systems to conditions of climate change and to extreme weather events such as long periods of drought or heavy rains. Water scarcity is expected to increase as is competition for water resources among users. Smallholder farmers are particularly vulnerable to changes in water access and availability: a sudden lack of water due to drought can mean lost income and food, threatening their lives and those of their families. For these reasons, major efforts are needed to address the links between water scarcity, food security and livelihoods in our changing climate.

The KnoWat project takes an integrated approach to water resources management that includes water accounting, water productivity, water governance and water tenure assessments. **Water accounting** is the systematic study of current status and future trends in water supply and demand in a given spatial domain. **Water productivity in agriculture** signifies the ratio between yield and the water consumed by a crop. To support water accounting and productivity assessments, the KnoWat project built the capacities of key partners to apply FAO's Water Productivity Open-access Portal (WaPOR). This tool assesses water consumption in agriculture and the water productivity of agricultural production using remote sensing.

Water governance assessment looks at the broad framework of institutions, finance and the political economy. To better understand water governance processes, the project developed and tested a **new methodology to assess water tenure**, the formal and informal arrangements used to access water. The assessment of water tenure aims to understand the different relationships between people and water resources.

Enriching our knowledge around water through accounting, productivity, governance and tenure assessments helps policy and decision-makers to plan and implement **better policies**, with the ultimate goal of ensuring equitable water allocation for **better livelihoods, food security and healthy ecosystems**, even under conditions of growing water scarcity.

Federal Ministry of Food and Agriculture

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For further information, contact:

Benjamin Kiersch
Project Coordinator
Land and Water Division
Land-Water@fao.org

Joseph Bizima
National Coordinator Rwanda
FAO Representation
in Rwanda
FAO-RW@fao.org

Lamine Samaké
National Coordinator Senegal
FAO Representation
in Senegal
FAO-SN@fao.org

Thushara Ranasinghe
National Coordinator Sri Lanka
FAO Representation
in Sri Lanka
FAO-LK@fao.org

https://www.fao.org/in-action/knowat