

Learning programme

Securing land rights with participatory GIS mapping

Secure tenure is not only important for sustainable land and natural resource use; it is also important for social inclusion and climate change adaptation. Farmers who do not have secure tenure of the land where they grow crops or keep livestock may be unwilling to invest in it. So improving their tenure security is essential. Geospatial tools, such as participatory GIS land recordation and mapping, provide new ways of recording land **parcels and tenure arrangements cheaply, quickly and effectively**. This information can then be fed into land registers.

To aid development partners, IFAD and the Food and Agriculture Organization of the United Nations (FAO) have developed “GeoTech4Tenure”: a free, online course that provides participants with techniques and tools on how to **select the most appropriate technologies to record land** in rural development projects.

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Figure 1. IFAD’s Livestock Marketing and Resilience Programme in Sudan helps communities co-manage livestock routes and avoid encroachment on the livestock route which is shown by the double white lines in the image above.



Figure 2. IFAD’s Smallholder Tea and Rubber Revitalization Project in Sri Lanka is helping farmers to grow tea and rubber. At the same time, GIS technology is being used to map farmers’ plots – see the image above – in order to issue land titles.

Secure land tenure is a foundation for climate change adaptation. Secure rights are especially important for women, youth and indigenous communities. Tenure insecurity causes conflicts, marginalization of more vulnerable groups, lower productivity and land degradation.

Farmers who are willing to invest time and resources in adapting their practices to a changing climate need confidence that they will still be able to use their land and reap **its benefits in future**. If their tenure rights are not secure, they cannot be confident that they and their children will benefit, and they will not be willing to make investments and adapt their farming practices.

A number of IFAD-funded projects help farmers record their land to **improve their tenure security**. Participatory methods and geospatial technology can help to achieve this.

The GeoTech4Tenure online course serves development partners and organizations interested or involved in projects involving IFAD or FAO. It equips them with the skills needed to find solutions to secure tenure rights by combining participatory methods and geospatial technology.

Conventional land-related services are often expensive, outdated, not accessible, or not adapted to the community’s prevailing tenure system. Too often, they are slow, expensive,

overly precise and bureaucratic. As a result, people do not use them: land parcels are subdivided, are built on or change hands without these transactions being reflected in the official records.

Conventional land administration may also fail to recognize the different customary rights that people may have to a particular piece of land. A farmer may use the land in the wet season to grow crops, but a herder uses the land for grazing after the harvest. Others may have the right to harvest fruit, gather firewood or collect water on the same piece of land.

The GeoTech4Tenure course promotes a more flexible approach known as **fit-for-purpose land administration**. This is tailored to the local situation and a flexible approach to capture a range of rights in different contexts.

While geospatial technologies are not a silver bullet that can solve such problems, they can provide part of the solution. They are particularly useful in participatory mapping, allowing local people to record their claims to land. Handheld GIS equipment can be used to record the locations of land parcels, map boundaries, and record overlapping claims. Satellite and aerial images can help locate parcels and landscape features such as forests, roads and rivers.

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RESOURCES

- [Course information](#)
- [Webinar series](#)
- [Emailing list](#)



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Figure 3. In Cambodia, FAO used a set of free, open-source tools to help communities strengthen the governance of community forests. This helped to protect forests from being exploited.

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Course contents

The participants learn:

- The core concepts of tenure, tenure security and tenure governance;
- The challenges and opportunities surrounding tenure issues for land-based investments;
- Methods for participatory land recordation and mapping;
- The use of different geospatial technologies for land recordation; and
- The criteria for selecting the most appropriate technologies for a given situation.

The course contains the following components:

- An e-learning and technical guide;
- Peer-to-peer learning opportunities with people from all over the world;
- Online workshops;
- Virtual visits to learning sites;
- Online mentoring from experienced land tenure experts; and
- Project work on integrating land recordation within an IFAD-supported project.

The pilot edition of course ran in the first half of 2021. The course runs regularly, takes six weeks and requires a commitment of 4-5 hours per week. The first editions of the course are in English. Courses in Spanish and French are being planned.

This course has been developed in collaboration with FAO. It is funded by IFAD's Innovation Challenge programme, with additional financial and technical support from FAO and IFAD.

Participants can subscribe to the land tenure [email list](#) to stay up-to-date with the latest developments of the programme.

Webinar series

The learning programme is accompanied by a series of webinars where technology providers present their software solutions for land recordation in a participatory context and give examples how they are applied in practice. Each webinar lasts 30 minutes.