



The impact of improved land administration in Nicaragua



With the support of the World Bank, FAO and other development partners, recent government administrations in Nicaragua have transformed the land sector with the enactment of new laws and procedures, the modernization of land institutions, the updating of the land cadastre, and the implementation of systematic regularization and titling.

Nicaragua's Land Administration Programme (PRODEP) was designed as a multiphase investment project with the goal of modernizing the land administration institutions and their information systems. It also sought to reinforce property rights, especially for small landholders, women and the poor.

Programme implementation formally started in mid-2002 in the departments of Chinandega, Estelí, Madriz and Leon and 22 indigenous territories, with the first Land Administration Project PRODEP-I (2002–2013). A second phase of the programme, PRODEP-II (2013–2020), aimed to regularize land tenure in the departments of Jinotega and Nueva Segovia, and further scale up of the cadaster-registry information system (SIICAR), which had been piloted during the first phase.

In 2020, FAO's Investment Centre supported the World Bank with an impact evaluation study. Key results of the impact evaluation, also supported by FAO's Agrifood Economics Division (ESA), are summarized in this brief.

Theory of change of the impact evaluation

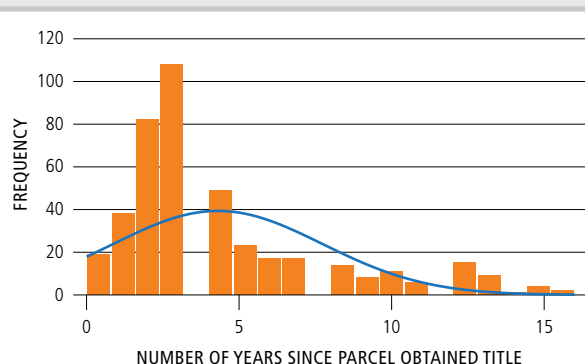
The impact evaluation focused on the regularization of land tenure rights through either individual or joint titling. Most treated parcels in the study's sample had obtained their titles, on average, 4.5 years before the survey was conducted (Figure 1).

The expected impacts and the causal mechanisms of PRODEP's titling after this period of time were the following. Through systematic land regularization and the modernization of SIICAR, PRODEP would transfer de facto State and non-registered lands to individual or collective land rights for legitimate possessors. An investment demand effect would be observed in property enhancements (e.g., building a fence around the property and/or making improvements in the household dwelling), as well as in increased utilization of land resources for agricultural production.

KEY MESSAGES

- ▶ Nicaragua's Land Administration Programme (PRODEP) ensured gender equality in the access to land titles, with women landholders more likely to obtain titles than men landholders.
- ▶ The programme significantly increased beneficiaries' perception of high tenure security, and title holders were more likely to report that their land had increased its value.
- ▶ The lack of impacts in other household level investments provides policy insights on the need of complementarity support measures for land owners.

FIGURE 1. Frequency of parcels by number of years after a title was obtained through PRODEP



Source: De la O Campos, A.P., Edouard, F. & Ruiz, M. 2021. *Effects of land tenure rights formalization on household investments – The case of PRODEP in Nicaragua*. FAO Agricultural Development Economics Working Paper 21-11. Rome, FAO.

Investment demand would also drive requests for credit, while overall land formalization would increase access to credit by households that use their land titles as collateral. Financial institutions would also be more willing to grant credit, as default risk decreases. A more detailed cadastral and registry

system would also help maintain the property information up to date and increase local government's ability to collect land taxes. Finally, increased land tenure security and a more efficient cadastre and registry systems would facilitate formal land and property transfers.

What have been the main impacts of PRODEP's titling?

Estimating the weighted average effects observed among beneficiaries of PRODEP who obtained titles (the treatment effect of the treated) was the objective of the impact evaluation. The outcomes of interest included the perception of land tenure security and of increased value of land; different indicators of household investments, including building fences around the property, and improvements in the household's dwelling; tax payments at municipal level; and access to credit by landowners.

The analysis was based on an ex-post evaluation using data was collected from three different groups: a representative sample of parcels that PRODEP-I georeferenced (cadastral survey), regularized, titled and finally registered in the Property Register in Chinandega district, and of parcels that were also benefitted by PRODEP-II in Jinotega and Nueva Segovia districts. The so-called control group is a representative sample of eligible parcels that are not titled because either the process of formalization of their lands has not concluded or their legal status did not allow for that. All samples were derived from the cadastre survey and the juridical assessment of properties carried out by Nicaraguan Institute for Territorial Studies (INETER) and Nicaragua's Property Intendancy.

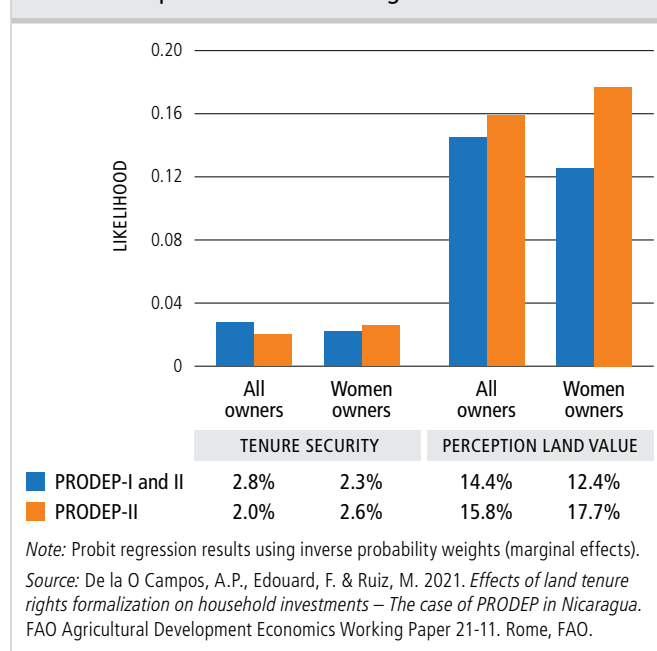
The programme has been found to have significantly contributed to landowners' perception of high tenure security. The impact effect of PRODEP's titling, while not sizeable, was statistically significant: about 3 percent in all treated parcels, and about 2 percent when only parcels of PRODEP-II were considered (Figure 2).

The highest effect of PRODEP's titling was in relation to landowners' perception on the increment of land value after titling and inscription in Property Register. The impact effects of titling ranged from 12 to 18 percent when using the probit model with Inverse Probability Weighting (IPW); and up to 26 percent when using instrumental variables (results not shown).

The perception of an increment of land value was also higher amongst women land title owners who benefited from PRODEP-II, with women's title owners being 9.4 more likely to report an increase in the value of the land than male land title owners (results not shown).

On the other hand, the evaluation found no impact in title holders' access to credit, nor in other investments such as building fences around their parcels, improvements in the household dwelling or agricultural production. In relation to this, the evaluation showed that poor dwelling conditions did not improve over time, once a title

FIGURE 2. Impact of PRODEP's titling



had been received. Also, effects of titling in accessing basic services were concentrated in parcels where landowners had received titles more recently, probably as a result of resettlement in more recent years to areas with better access to services. Finally, social protection and housing support from the government were found to be biased towards wealthier households, conditional on title ownership and other factors.

Policy implications

Findings from the impact evaluation of PRODEP point to positive effects, particularly on the programme's main objectives, namely on increasing landowners' tenure security, and on achieving fairness in terms of gender equality in land rights. The data also suggest that new title owners kept their lands to the most part, as market transactions after titling were limited (7.3 percent).

However, the programme impacts suggest that land formalization and titling will not reach desired outcomes in isolation, particularly in relation to household investments, access to credit and welfare. The successful and efficient implementation of PRODEP should be seen as only one pillar in a strategy for reducing poverty through increasing the value of the assets of the poor and enhancing local economic growth. Coverage of other programmes, including social protection, housing support, and agricultural livelihood support programmes will need to be strengthened in the future, and implemented in such way that enable more synergies and joint impact with land tenure formalization.