

# Tribals finally get land rights, using GPS technology

## SWAMINOMICS

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Last week I visited tribal areas in Gujarat to see how technology and an activist NGO could empower once-powerless tribals to get their full land rights under the Forest Rights Act, 2006.

The Act provided for land titles to be given to tribal plots in cultivation in December 2005. Earlier, government takeover of forests had converted forest dwellers into encroachers on land they had occupied for centuries. Their villages and farms were always at risk of demolition by forest departments. The Act was supposed to end this inequity. Many state governments soon claimed, falsely, that they had implemented the Act, empowering lakhs. In fact implementation was terrible. No proper maps or land records existed in most areas. Semi-literate villagers were supposed to fill long forms and file claims. Forest Departments contemptuously vetoed most claims.

Under the Act, gram sabhas certified which plots were cultivated by individual families in 2005, and forwarded the documents to the state government. But 128,000 of the 182,000 claims filed in Gujarat were fully or partly rejected. Even in the accepted cases, only part of the claimed area was approved. ARCH (Action Research in Community Health and Development) and other NGOs appealed to the High Court. The Court pulled up the state government and decreed a review of claims, allowing many sorts of evidences (including panchnamas, case records, official receipts and satellite images from Google Earth as well as the National Remote Sensing Agency) to establish ownership.

This opened the path for redress. Yet the traditional survey method of triangulation to establish the boundaries and area of each farm plot was onerous. Then ARCH came up with the idea of using GPS (global positioning system) hand-held devices costing Rs 12,000 apiece. Holding a GPS device, a tribal simply walked around the perimeter of his plot and pressed some buttons. The device automatically sketched a map of his farm, with the right latitude and longitude and exact area.

This enabled every family to produce a map of its holding, and get it verified by the gram sabha. All individual maps were then superimposed on a satellite image of the village dating from 2005 (the deadline under the Act). This produced a detailed map showing the exact size and ownership of every plot. Land disputes arose if two villagers walked over the same area, and disputes were settled by the gram sabha before certification. Any encroachment on forest land after 2005 showed up clearly after superimposing today's maps on the 2005 satellite



**HELP FROM ABOVE:** GPS units are helping tribals carefully map their land and then get it verified by gram sabhas

image. This assuaged the Forest Department's fears.

Thus a simple technology promoted by activist NGO provided a quick, elegant solution. The overall village map was then uploaded onto the internet, empowering any villager to go to an internet café in a nearby town and print out a copy. This ended tribal dependence for land documentation on government departments or NGOs. Tribals are willing to pay Rs 60 to ARCH for this service, roughly enough to cover all costs. So, the project can be expanded without limit with no subsidy or donations.

The new approach yielded far better outcomes. When tribals re-filed claims using these maps and additional evidence like panchnamas and receipts, government acceptance of claims went up to 61 out of 63 in one village, and 96 out of 112 in another. ARCH hopes to average 90% success. Early project villages are training their neighbours in using GPS, speeding up tribal capacity. The project has so far covered 150 tribal villages, just one-tenth of the total. It may take 18 months to cover all villages.

The Gujarat tribals say formal ownership makes a huge difference. They are no longer treated as encroachers, and so are entitled to all government schemes for agriculture, including land leveling and well digging on their lands under MNREGA. Earlier, the forest department banned the entry of tractors into forest land. But after getting ownership recognition, tribals say they use tractors on 90% of plots, because these are faster and cheaper than bullock ploughing. They want to modernize fast.

There is an urgent need to spread this approach to all forested states. The Liberty Institute and ARCH are trying to do so (see [www.fra.righttoproperty.org](http://www.fra.righttoproperty.org)) by contacting NGOs everywhere. Some Marxist and "romantic pastoralist" NGOs oppose the very notion of individual plots, or of modernizing tribals. But less ideological NGOs are co-operating. A massive country-wide effort is needed to empower millions of tribals, making them masters of their own plots and community land.

The same GPS technology could be used to help update land records across India. This may require prior work on dispute settlement, since disputes are furious and widespread. Still, the methodology has much potential.

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