The impact of World Agroforestry Centre research: growing slowly, but steadily

Trees on farm are improving lives and landscapes in the developing world

Compared to the lifespan of some trees, the World Agroforestry Centre is relatively young. Established in 1978, the agricultural research institute, formerly known as the International Centre for Research in Agroforestry (ICRAF) has been studying the role of trees on farm to improve lives and landscapes in Asia, Africa and Latin America for over three decades. But what has been the impact of the Centre’s research on the livelihoods of smallholders in the developing world and in creating more sustainable and productive landscapes?

Frank Place, ICRAF’s Impact Assessment Advisor, points out that science traditionally has ‘an indirect relationship’ with impact on the ground. In every country the World Agroforestry Centre works through extension systems – national agricultural research institutions, universities, NGOs and other development partners.

Hundreds of thousands of farmers

Still, it is clear that ICRAF’s research has played a major role in introducing new methods for managing trees on farm according to Frank Place. Start with some improved agroforestry technologies, like fertilizer trees that increase crop yields and fodder shrubs that are used by hundreds of thousands of farmers in Southern and Eastern Africa. “Fertilizer tree planting practices were not there before, so it is obvious to see what ICRAF’s role was and our research indicates that farmers are maintaining their use in many areas where they were introduced.” Smallholder dairy-farmers who adopt fodder trees produce more milk, ICRAF studies show, and for poor farmers in Africa – who cannot afford fertilizer – planting fertilizer trees provides a useful alternative to boost crop yields.

The World Agroforestry Centre is also domesticating high value wild trees to become cash crops, enabling farmers to earn an income from them. Examples include Allanblackia, used for high value oil in food products, previously wild fruit species such as bush mango, Safou, and Ziziphus and medicinals such as Warburgia. ICRAF’s role has also been instrumental in developing a wide range of methods for improved land management, such as soil quality and land degradation assessment, carbon measurement and payment for ecosystem services models.
“Assessing the effects of ICRAF’s research on policy change and training and extension systems is more difficult,” says Place, “but ‘the language of agroforestry’ is increasingly getting into national and international strategies and policies.” The World Agroforestry Centre, for instance, helped to change policy in Indonesia, advocating for farmers to be given strong property rights in exchange for good stewardship of land. The Centre also contributes to many technical background papers on topics ranging from improved water management using agroforestry principles and techniques to climate change (carbon measurements and systems to reduce deforestation and degradation: REDD, REALU). Finally, agroforestry curricula – courses and degree programmes – have been strengthened in colleges and universities throughout the developing world.

Agroforestry for ‘climate smart’ future farming

Despite the successes in uptake, it is important to keep investing in agroforestry research for development, argues Place. “It is expected that by 2050 there will be another billion people and we will need to increase food production by 60%, requiring agricultural growth rates of over 1% per year.” There is however already a downward trend on yield growth with degrading soils and increasing water scarcity. “We cannot necessarily rely on existing germplasm and current agricultural management techniques to guarantee food security in the coming decades. Climate change adds to that,” says ICRAF’s Impact Assessment Advisor.

Large-scale uptake of agroforestry practices has the potential to reverse this trend, Place argues. “A variety of agroforestry techniques can enhance soil health at field level and improve water regulation in catchments.” The chemical and biological processes that trees trigger can have a positive effect on soil fertility and water retention, boosting potential crop yields (see also the information brief on agroforestry & land rehabilitation).

However, further research and scaling up is needed to realize agroforestry’s potential. Challenges such as climate change require identifying the best tree germplasm for 30 years down the road and best-fit integrated tree-crop-livestock practices for ‘climate-smart’ future farms.

For more information, visit www.worldagroforestry.org and search keyword ‘Impact’