

# Water and food security



Enabling poor rural people  
to overcome poverty



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Agriculture is a thirsty business, with irrigation alone accounting for about 70 per cent of freshwater withdrawals. Meeting demand from a world population expected to top 9 billion people by 2050 will require a 10 per cent increase in water for agricultural use. Enormous efforts will be needed to reduce water demand and improve water use efficiency.

Water is critical not only for food security but for general security as well. Water scarcity has been a cause of civil unrest and conflict. And water consumption has increased at more than twice the rate of population growth over the past century. But water is a finite resource. By 2025, around 1.8 billion people will be living in areas with absolute water scarcity.

Access to water is not evenly distributed. It is the poorest people in the remotest areas of developing countries who usually have the most limited access

to water and the fewest water rights. Water scarcity and low soil fertility curb the productivity of the land cultivated by poor smallholder farmers, and climate change is worsening the situation.

## **Parched lands, forgotten people: Solutions at scale**

Of the world's 1.29 billion very poor people, about 70 per cent live in rural areas of developing countries. Agriculture is the main employer in many of the poorest developing countries, and small farms provide up to 80 per cent of food in sub-Saharan Africa and parts of Asia.

IFAD specializes in projects aimed at improving the incomes and food security of poor rural people in developing countries. From rainfed agriculture to micro-irrigation, from rangeland management to livestock watering points, IFAD supports practices that help poor farmers to increase the efficiency and effectiveness of their water use. For example, grey water filtration in Brazil recycles washing water for agriculture; integrated rice and fish production in South-East Asia allows farmers to optimize water productivity.

IFAD-supported projects focus on often forgotten stakeholders – including poor smallholders, women and indigenous peoples – as well as traders, retailers and local governments. By bringing these groups together and working to address their diverse needs, projects are more likely to be sustainable – economically, socially and environmentally – and the benefits more likely to continue even after the project has closed.

## **A market, a method, a model**

Small- and medium-scale private sector activity has enormous potential to drive development – but only if successful business models are created that work for individuals and communities. No one will make or use a product that they don't understand, and no one will use one that they can't afford. A holistic approach that supports this business model is also a realistic approach to development. It delivers the assets needed (knowledge, technology, finance) to make an innovation work in a given context (the people, the geography, the politics, the community, the economy). This is key to generating the



## KEY FACTS

- The world population is expected to rise from around 7 billion people today to 9.1 billion in 2050.
- To meet demand from a larger and more affluent population, annual cereal production will have to grow by almost a billion tons from 2.1 billion tons, and meat production by over 200 million tons to 470 million tons in 2050.
- 70 per cent of global water withdrawals go to irrigation. Irrigated agriculture represents 20 per cent of total cultivated land but contributes 40 per cent of food produced worldwide.
- Water scarcity affects every continent, and more than 40 per cent of the people on our planet. By 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity.
- The future of farm production will depend on improved use of rain and irrigation water, combined with good agriculture practices.
- We can make precious water resources go further by reducing wastage. Around 30 per cent of the food produced worldwide – about 1.3 billion tons – is lost or wasted every year. This can be changed by improving storage and transportation in developing countries and raising consumer awareness in developed countries about the resources needed to produce food.

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IFAD is an international financial institution and a specialized United Nations agency dedicated to eradicating poverty and hunger in rural areas of developing countries.

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critical mass of users and suppliers needed to make the business sustainable before (not after) the donors have left.

Commercially viable interventions – sustainable business models – can produce multiple benefits. A low-cost technology such as micro-irrigation equipment made locally from available materials creates jobs for small businesses while also giving poor farmers access to technology and post-sales services that could be too expensive at import prices.

For example, the IFAD-supported Scampis project (2009–2012) changed the lives of 30,000 vulnerable farmer households after they adopted low-cost, user-friendly technologies. Old flip-flop sandals were collected by otherwise unemployed people and used as material to make parts for micro-irrigation equipment in Madagascar. As well as providing a local source of materials for irrigation, this activity promoted recycling and created jobs for street workers who collect the old sandals, and for small businesses that make the irrigation parts.

The main agricultural development goal of getting farmers to use a technology like micro-irrigation is only one part of a commercial system involving many players, including traders and retailers in the private sector. If all players see a stake – and a livelihood – in the activity, then a sustainable intervention results.

### Looking downstream: Scaling up

Successful projects are not enough – they need to be broadened or scaled up to reach more people. This is often more complex than just making them bigger. The various modalities have to be selected and tailored according to the context (institutional, cultural, political) or they will not work.

In the water sector, IFAD sees three avenues for scaling up:

- Expansion — Taking a successful approach and casting it over a wider area, reaching more beneficiaries.
- Adaptation — Transporting an approach that has worked in one context (a country or community) and adapting it so that it works in another.
- Policy embrace — When an approach piloted by a development organization or private actor is embraced by government and institutionalized.

Real scaling up, at a level that addresses food security, needs field testing to prove to farmers and governments alike that the innovation actually works. For example, when IFAD introduced improved traditional planting pits in Niger to combat water run-off and gully erosion, it first took a group of local farmers to Burkina Faso so they could see how the pits worked. On returning home, some of the Niger farmers decided to revive their own planting pit, using a field next to the road so that travellers could see the impact. The results were so impressive that the use of these pits grew, year by year, bringing thousands of hectares back into production. Yields increased and barren land was rehabilitated. The technique is now also being used in Cape Verde.

Once an innovation has been proven, it must be supported by the creation of favourable conditions and policies so that it can be adopted and mainstreamed through local and national institutions.



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