Reclaiming Land through De-Rocking

In Syria, large areas of degraded land have been turned into arable land thanks to several IFAD projects that managed to combine the sheer power of bulldozers with the long-term commitment of farmers.

Hallow soils and very rocky terrain (an average of 2,000 m³ of rocks per hectare) are major constraints to agricultural production in Syria. De-rocking, in fact, is a long-standing land reclamation practice that Syrian farmers have used for thousands of years, although with little effect since it was carried out by hand. Real progress started to be made when the government and some international agencies promoted mechanical de-rocking activities. Since 1982, IFAD has supported seven projects in Syria: five of them had a major component of land improvement through de-rocking, representing almost two-thirds of the total cost of the projects. IFAD’s de-rocking operations were informed by a holistic approach integrating the use of heavy equipment with complementary activities such as adaptive research, extension and training, in order to have the highest impact on productivity and farmers’ earnings. Farmers’ participation – before, during and after de-rocking operations – turned out to be essential to the long-term sustainability of the land reclamation efforts.

Country:
Syria

Direct Beneficiaries:
Small farmers

Results:
• To date, the total area reclaimed through de-rocking is about 700,000 hectares, or 12 per cent of total cultivable area. IFAD-supported projects contributed to de-rocking 180,000 hectares.
• IFAD-supported de-rocking activities directly benefited 70,652 households, and more than doubled the size of arable land in the project areas.

Main Lessons:
• A realistic and flexible approach to project management helps beneficiaries participate gradually and paves the way for the development of appropriate technical solutions.
• Land reclamation has a positive and sustainable impact on farmers’ incomes and livelihoods only when the reclaimed land is effectively used.
• Land reclamation, if conducted as prescribed, has a positive impact on the environment and biodiversity.

BASIC INFO
Sources:
• Syrian Arab Republic – Thematic Study on Land Reclamation through De-Rocking, Main Report (Draft), IFAD, 2006
• Project Names:
  • Southern Regional Agricultural Development Project I
  • Jebel al-Hoss Agricultural Development Project I
  • Coastal/Mediterranean Agricultural Development Project
  • Idlib Rural Development Project
Project Starting Dates:
Contact:
Mr. Abdallah Aboudou, PN Division, IFAD (email: a.abdouli@ifad.org)

WEB PAGES
IFAD operations in NENA and CEN:
http://www.ifad.org/operations/projects/regions/pn/index.htm
IFAD learning notes:
http://www.ifad.org/rural/learningnotes/index.htm

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In Syria, the abundance of mountainous or hilly lands with shallow soils and bare rock is the result of processes of severe water and wind erosion. It is estimated that more than 17 per cent of the land area is affected by some form of degradation.

In 1977, the government introduced the first large-scale land reclamation effort through mechanical de-rocking with the National Fruit Tree Project, which is still an ongoing activity. This early effort was followed by a series of other government projects: the Second Quneitra Fruit Tree Project (started in 1978), the Green Belt Project (1980), and the Ali Al Ai Project (1986). In the meantime, the government and IFAD identified de-rocking as a means of expanding cultivable land and increasing the productivity of small farms, and chose to use it as their main intervention in the following IFAD-supported projects: the Southern Regional Agricultural Development Project I (1982) and II (1992), the Jebel al-Hoss Agricultural Development Project (1995), the Coastal/Middlelands Agricultural Development Project (1996) and the Ilibb Rural Development Project (2003). The de-rocking component of these five projects accounted for as much as 64 per cent of total project costs.

**De-Rocking Operations**

The process developed and used in IFAD-supported projects with de-rocking component is based on a set of development measures: 1) selectively removing surface and subsurface rocks; 2) supporting adaptive research; 3) strengthening extension services; 4) supporting livestock development; 5) improving rural water supply; 6) providing intensive training programmes to rural women; 7) introducing a pest management programme; 8) supporting rural women’s groups in designing income-generating activities; and 9) supporting adapted credit services.

Beneficiaries were heavily involved in the organization of activities, received extension training and were sensitized to the objectives of the project. Farmers’ input was crucial in the trial-and-error process that took place to identify the rake most suited for basaltic and other solid slabs. Also, farmers were responsible for collecting the remaining rocks from the field once the mechanical de-rocking was completed: during the first three to five years, 5 to 10 per cent of all rocks were removed manually. This is why farmers’ firm commitment to future land maintenance is a prerequisite for participation in the most recent projects.

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**Replication and Scaling Up**

In light of its success, land reclamation through de-rocking has already been replicated in many projects throughout the years, as shown above, and it will very likely be further replicated and scaled up in the future. However, it has been pointed out that future de-rocking operations will be more effective once the methods and knowledge generated in past operations are adequately documented in operational manuals for training purposes. Too often, in fact, most knowledge and innovations are preserved only in the memory of senior members of the local community and field technical staff.