



## Tassa and soil fertility in Niger

### I. Background:

<p><b>1. Name of innovation:</b> Tassa techniques for soil fertility</p> <p><b>2. Country - Region:</b> Niger, Tahoua region</p> <p><b>3. Organization:</b> IFAD</p> <p><b>4. Who is the innovator?</b> Farmers involved in the Niger Special Country Programme</p>	<p><b>5. Actors involved:</b> IFAD and farmers</p> <p><b>6. Implementation date:</b> -1998</p> <p><b>7. Type of innovation:</b> Technological</p>
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### II. Key Issues:

#### 8. Summary:

Desertification is one of the key environmental challenges faced in the Sahel and semi-arid Africa, exacerbated by climatic variability and the potential impacts of climate change in the region. The persistent degradation of dryland ecosystems principally due to human activities and climatic variations are trends that need to be addressed.

In the Tohoua region of Niger, regular floods used to bring fertile sediment to the valley floor but a succession of droughts led to loss of vegetation on the valley slopes. As a result, water runs off rapidly, causing gully erosion on the slopes and damage to fields downstream.

In 1988, a ten-year programme of soil and water conservation was launched in Tahoua, Niger to reintroduce simple, replicable conservation practices. Thirteen local farmers made a study visit to Yatenga, in Burkina Faso, where they discovered the successful use of a land rehabilitation technique known in Yatenga as *zai*, that resembled their own traditional planting pits. The improvements consisted of increasing their dimensions from a diameter of 10 cm to 20-30 cm, from a depth of 5 cm to a depth of 10-25 cm, to collect and store more rainfall and runoff, and putting organic matter in the pits to improve soil fertility. This organic matter attracts termites, which digest it and make the nutrients more easily available to the plant roots. They also dig channels and by doing so increase the water holding capacity of the soil. When farmers dig the pits, they remove the soil and bank it on the downstream side. This forms a small ridge which helps retain more water. When it rains, the holes fill with water and farmers plant millet or sorghum in them. When the Nigerian farmers returned home, some decided to revive the traditional hand-dug planting pit technique, known locally as *tassa*. They started with four hectares of land, including one field next to a main road so people travelling by could see the impact. The results were so impressive that the following year *tassa* use increased to 70 hectares. This was a drought year; only those farmers using *tassa* had a reasonable harvest. Over the next few years, *tassa* was instrumental in bringing 4,000 hectares back into production.

In 2007-8, *tassa* has become an integral part of the local farming scene and is still spreading at a rate of about two to three hectares per year. It has improved household food security and mitigated agricultural risk for many impoverished families in Niger. The technique is now being disseminated and taken up in Yatenga in Burkina Faso, and is being introduced in Cape Verde.

#### 9. What issue does the innovation address?

- Persistent degradation of dryland;
- Loss of vegetation and continuous erosion;
- Water scarcity

**10. Key success factors for replication:**

- Participatory land use planning methodology;
- Access to land;
- Focus on production system existing in the villages.

**11. Accessibility:** (Poor, gender, youth, migrants...)

Poor farmers in dryland ecosystems.

**12. Difficulties encountered:**

- High climatic variability due to climate change
- Land tenure insecurity

**13. Financial aspects:**

-Initial investment of 40-60 person days/ha.

### III. Technical Summary:

(Main technical characteristics - In addition to section 8 summary)

### IV. Follow up:

**15. Key contacts:**

Information given in the previous sections

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**16. Useful web link:**

[www.ifad.org/french/operations/pa/ner/i381ne/index.htm](http://www.ifad.org/french/operations/pa/ner/i381ne/index.htm)

[www.ifad.org/operations/projects/regions/pa/NE\\_all.htm](http://www.ifad.org/operations/projects/regions/pa/NE_all.htm)

**17. Key documents:** (Name of the document + Link or Contact or Co ordinates)

- IFAD (1998). *The Niger Special Country Programme - Phase 2 (PSN-II)*. Rome: IFAD.