SAFE-World Project/Initiative Summary

Country: Niger

Project / Initiative Title: Soil / Water Illela - IFAD (The SWC subprogramme under the Niger Special Country Programme)

Nos. farmers: 3100 Hectares: 6300

Agro-Ecological Zone: II

Improvement types

1x	2	3x	4	5x	6x	7	8	9

A. Key Impacts

A1 – Productivity

	Before / Without	After / With	% change
Maize	280 kg / ha	480 kg / ha	71

A2 – Impacts on natural capital

?? The tassas make optimal use of available organic fertilizer (night soil, manure) in a setting where fertilizer (i.e., its mobilization and transport) is a major constraint on agriculture .

?? Tassas make it possible to cultivate plateau lands, which have become a valuable resource in the face of growing land pressure in valleys and on other available lands. Also, as land is brought under cultivation, crop borders serve to demarcate farmers' holdings.

?? Counteraction of surface erosion

A3 – Impacts on local community (social capital)

?? Tassas make it possible to cultivate plateau lands, which have become a valuable resource in the face of growing land pressure in valleys and on other available lands. Also, as land is brought under cultivation, crop borders serve to demarcate farmers' holdings.

?? In some cases, a new labour market has sprung up, creating new sources of income locally.

A4 – Impacts on households and individuals (human capital)

Food availability risen between 20 and 40% - depending on rainfall conditions – improved food security

B. Types of Sustainable Agriculture Improvements

Type 1: Better use of available renewable natural capital
Type 2: Intensification of single sub-component of farm system
Type 3: Diversify by adding new productive natural capital and regenerative components
Type 4: Better use of non-renewable inputs and technologies
Type 5: Social and participatory processes leading to group action for making better use of

natural capital
Type 6: Human capital building through training-learning programmes
Type 7: Access to Finance
Type 8: Add value by processing to reduce losses and increase returns
Type 9: Add value by direct or organised marketing of produce to consumers

	Yes / No	Narrative
Type 1	x	?? The tassas make optimal use of available organic fertilizer (night soil, manure) in a setting where fertilizer (i.e., its mobilization and transport) is a major constraint on agriculture .
Type 2		
Type 3		
Type 4		
Type 5		
Type 6	x	An action-research approach that combines flexibility, openness to farmer initiatives, a forward-looking attitude and willingness to negotiate
Type 7		
Type 8		
Type 9		

C. Key Lessons: Success, Spread and Constraints

C2 – Aspects of local/national context contributing to success

?? Immediate results
?? Simplicity
?? Ability to be integrated into existing cropping systems
?? Replicability
?? The technique also mitigates agroclimatic risks
?? the technique can be used by individual farmers

D. Contact Point for Project/Initiative

Jean-philippe Audinet

Email: J.Audinet@IFAD.ORG

E. Project Narrative

Niger: Soil and water conserv ation

The IFAD-funded soil and water conservation in Illéla district is an example of a key sustainable agriculture technology having substantial multi-functional benefits whilst improving formerly degraded or abandoned lands. Some 5800 ha of abandoned and degraded lands on the farms of some 6000 households in 77 villages have been improved with the adoption of tassas (also known as zaï in Burkina Faso). Large-scale erosion control measures were not successful in the region.

Tassas are 20-30 cm holes dug in soils that have been sealed by a thin surface layer hardened by wind and water action. Since this crust prevents infiltration by water, these areas are usually abandoned, devoid of vegetation, scattered with outcroppings of iron crust, and are prime sites for surface erosion. The holes are filled with manure, since soils in this region are normally lacking in organic matter. This also helps to promote termite activity during the dry season, so further enhancing infiltration. When it rains, the holes fill with water and farmers then plant millet or sorghum. Tassas are normally used in conjunction with stone bunds, taking advantage of the stones that farmers remove from fields for planting. These methods of soil and water conservation were learned by farmers of Illéla on a visit to Yatenga in Burkina Faso where, on the central plateau alone, some 100,000 hectares have been restored – each now producing some 700-1000 kg of cereal per year. According to Hassan (1996), yields of millet without tassas, demi-lunes and contour stone bunds are of the order of 150-300 kg / ha. They rise to 400 kg with manure in a poor rainfall year, and 700-1000 kg / ha in a good rain year. Addition of some fertilizer increases yields again – to 650 kg / ha in poor years and 1400-1500 kg /ha in good ones.

This soil-development activity has allowed the region to attain average millet yields of 480 kg / ha, reaching levels of up to 700 kg / ha if chemical fertilizer is added (an as-yet uncommon practice). Comparatively, fields of similar quality levels produced only 130 kg / ha According to IFAD, food availability in participating households rose between 20% and 40%, depending on local rainfall conditions. Reij (1996) indicates that the average family in Burkina Faso and Niger using these sustainable agriculture technologies have shifted from being in annual cereal deficit amounting to 644 kg (equivalent to 6.5 months of food shortage) to producing a surplus of 153 kg per year.

Tassas are best suited to landholdings where family labour is available, or where farm hands can be hired. The technique has spawned a network of young day labourers who have mastered this technique and, rather than migrating, they go from village to village to satisfy farmers' growing demands. There are cases of land being bought back by farmers who recognized early on the profit that can be earned from this land.

Three key factors have contributed to the development and dissemination of this technology in the farming community:

?? An action-research approach that combines flexibility, openness to farmer initiatives, a forward-looking attitude and willingness to negotiate;
?? A technology that combines the core benefits of innovation: immediate results, simplicity, ability to be integrated into existing cropping systems, and replicability
?? A technological package that can adjust to the changing local context.

Sources: Alberta Mascaretti, FAO; Reij, 1996; Hassan, 1996