



Flood Retreat Agriculture in the Lower Omo Valley, Ethiopia

By David-Paul Pertaub, Dessalegn Tekle, Edward G. J. Stevenson

Introduction

Flood retreat farming is a technique of farming that relies on the annual flood of rivers to provide irrigation water. It has been practiced in many river basins in Africa, including the Awash, Niger, Nile, and Zambezi.¹ Prior to the construction of the Gibe III dam on the River Omo, approximately 100,000 people depended on flood retreat agriculture in the Lower Omo valley.² The main crops grown were sorghum, maize, peas and beans. Flood retreat farming was highly productive (Table 1).³

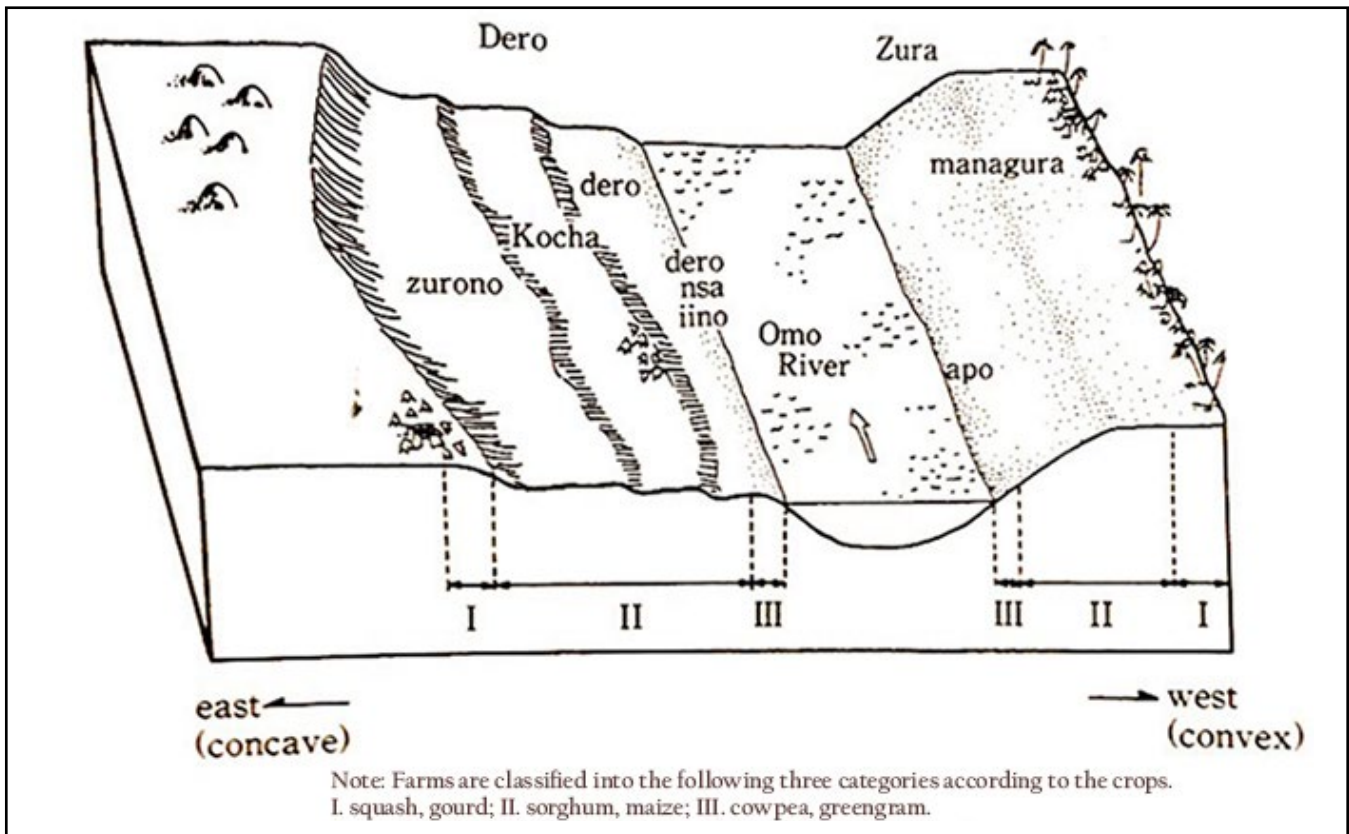
The Omo would flood between March and September, and cultivation would typically begin as the flood began to recede in October. In some places terraces were built along the river banks, with crops grown at various levels (Figure 1).

Table 1: Productivity of flood retreat farming in the Lower Omo valley

Ethnic group	Sorghum yields from flood retreat farming	Source
Kara	3000 kg/ha	Girke 2013; Matsuda 1996
Nyangatom	450-800 kg/ha	Alvarsson et al. 1989
Dassanetch	1000-2400 kg/ha	Almagor 1978 Bassi 1993

Compared with rain-fed and artificially irrigated agriculture, flood retreat agriculture offered significant advantages. Since floodwaters replenished the ground with nutrients, fallowing was unnecessary, and the

Figure 1: Flood retreat cultivation in Kara, Lower Omo (reproduced with permission, Matsuda 1996)



The Omo-Turkana Research Network is an international consortium of social and environmental scientists researching the impacts of hydrological, agricultural, and social change on the people and ecosystems surrounding the Lower Omo Valley and Lake Turkana. OTuRN affiliates collaborated on the research project SIDERA: Shifting In/equality Dynamics in Ethiopia: from Research to Application.

same plots of land could potentially be farmed every year. The flood removed accumulated salts, thus avoiding salinization, a common problem for irrigated agriculture in arid zones. Most crops would be harvested in January, providing a relatively dependable source of food at the height of the dry season. Low and erratic rainfall in the Lower Omo valley means that it is otherwise unsuitable for dry land farming. The harvest could be affected by variations in the duration, timing and extent of the flood from year to year. Very occasionally the floods would fail and no cultivation was possible. In the Omo delta area crops could be washed away in a late and unexpected surge. Heavy rains could also ruin the harvest (Almagor 1978; Carr 1977).

Methodology

With the completion of the Gibe III dam in 2015, the annual flood of the Omo ceased. In 2018-19, the SIDERA team conducted a household survey in the Lower Omo, to examine how communities had responded to this change. Our preliminary findings confirm the importance of flood retreat agriculture for household food security.

Results and Discussion

In Nyangatom, a variety of crops were grown in family farms along the river banks, including squash, pumpkin, gourds, and tobacco. For some families, this provided food that would last for much of the year. Farm produce was also sold or traded for commodities or animals. Flood retreat farming was an important route back into animal husbandry for poor people who had lost their herds due to disease or drought. Through networks of sharing, crops from the Omo were also distributed to other communities in areas more reliant on pastoralism.

The case studies on this page illustrate some of the ways flood retreat farming contributed to livelihoods in Nyangatom.⁴

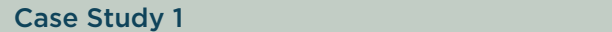
Our results underline the importance of flood retreat farming in the Lower Omo before 2015. Given the present impossibility of flood retreat farming and the unpredictability of rain-fed farming, there is a clear need for assistance to help families adapt to alternative livelihood strategies.

1 See Everard (2016).

2 The main ethnic groups practicing flood retreat farming were the Bodi, Mursi, Kwegu, Kara, Nyangatom and Dassanech. The Arbore and Hamar also benefitted from produce from the Omo, but obtained it through trade (Turton 2018).

3 To put the figures in Table 1 in context: in 1993 average yields for farmland in Ethiopia were 1313 kg/ha and in sub-Saharan Africa as a whole 1060 kg/ha (OECD).

4 Respondents were asked about their agricultural production today and in 2012 (2005 Ethiopian Calendar), the year of the last good harvest before the flood ended.



Case Study 1

L. T. and his three wives live in a village close to the Omo river in Nyangatom. In the dry season of 2012-2013, they cultivated on the bank of the Omo following the annual flood. Altogether they harvested 17 sacks of sorghum, two sacks of maize and two and a half sacks of cowpeas. They also obtained around 400 chunks of tobacco, 50 squash and 40 calabashes from their river gardens that year. L.T. gave three sacks of sorghum and calabashes to relatives in Kibish, around 30 km away. He also sold some of the squash and calabashes for around 1000 Birr. Without the Omo flood, his family obtained no harvest at all in 2018. Although they attempted to do rain-fed farming in the wet season, the crop was destroyed by locusts.



Case Study 2

A. P. is in her forties and lives in her own small compound near Kangaten, the administrative center of Nyangatom woreda (district). She separated from her husband in 2011 and today lives with her children and grandchildren. In the dry season of 2012-2013 she cultivated next to a seasonal lake that was filled by the annual flood of the Omo. She harvested four sacks of sorghum, one sack of cowpeas and around 100 squash from her garden. She also cultivated an irrigated plot (0.15 hectares) but she obtained no harvest from it that year because the pump broke down. This year (2018-2019) she harvested three sacks of sorghum from the irrigated plot. She did not attempt to cultivate near the lake, which has been dry since the end of the annual flood in 2015.

For further details

Contact Dr. Edward (Jed) Stevenson, Assistant Professor in the Department of Anthropology, Durham University.

Email: jed.stevenson@durham.ac.uk

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Briefing Note editors

Dr. Jennifer Hodbod:

Department of Community Sustainability,
Michigan State University.
jhodbod@msu.edu

Dr. Edward (Jed) Stevenson:

Department of Anthropology
Durham University
jed.stevenson@durham.ac.uk

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