



The Kuraz Sugar Development Project

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About this Research

The Kuraz Sugar Development Project (KSDP) is perhaps the largest agricultural development scheme ever to be launched by the Ethiopian Government. The expansion of sugarcane cultivation and processing in the Omo River Basin is already transforming the physical and social landscape of the region. However, little solid information about the KSDP is available to the public, and basic questions remain contested:

- Five years after the launch of the KSDP, what has been achieved?
- What are the central challenges and obstacles to the project?

This briefing note provides **information** on the structure, progress, and outlook of the KSDP. Drawing both on primary research and information provided by the Ethiopian Sugar Corporation, the objective is to establish a **common basis** for assessment of the KSDP and its impacts.

Context

The Ethiopian Government's Growth and Transformation Plan I (GTP-I) (2010/11 – 2014/15) placed a high priority on cultivation and processing of sugarcane. In 2011, the state-owned Ethiopian Sugar Corporation (ESC) announced its intention to expand sugarcane cultivation to 320,000 hectares across the country. Of this total, the KSDP would make up more than half, with estates projected to cover 175,000 hectares, and five processing factories.¹ Assuming 4 workers per hectare (either seasonal or permanent), the ESC predicts the number of jobs created by the KSDP could be as high as 700,000, not including the indirect opportunities through service delivery and the urbanization of the region.

¹ Three factories with a processing capacity of 12,000 tcd (tons crushed per day) and two factories with 24,000 tcd are envisaged as part of the KSDP. These factories theoretically require 25,000 hectares and 50,000 hectares of sugarcane respectively to fully utilise their crushing capacity.

² The project area is home to groups including the Mursi, Bodi, Suri, and Nyangatom.

Across the project area, a villagization program has been initiated to permanently settle the indigenous population of the region, who currently rely on a combination of farming and herding.² The stated aim is to provide them with irrigated fields, basic infrastructure and social services (i.e. medical care and schooling). Some 15 settlements are planned across the project site, promoting a combination of livestock herding, subsistence agriculture, and contract farming (i.e. sugarcane outgrower schemes). A further 42 villages would provide housing to workers employed on the estates and in the processing industry. Major urban centres, referred to as 'main towns', are envisaged near each processing factory.

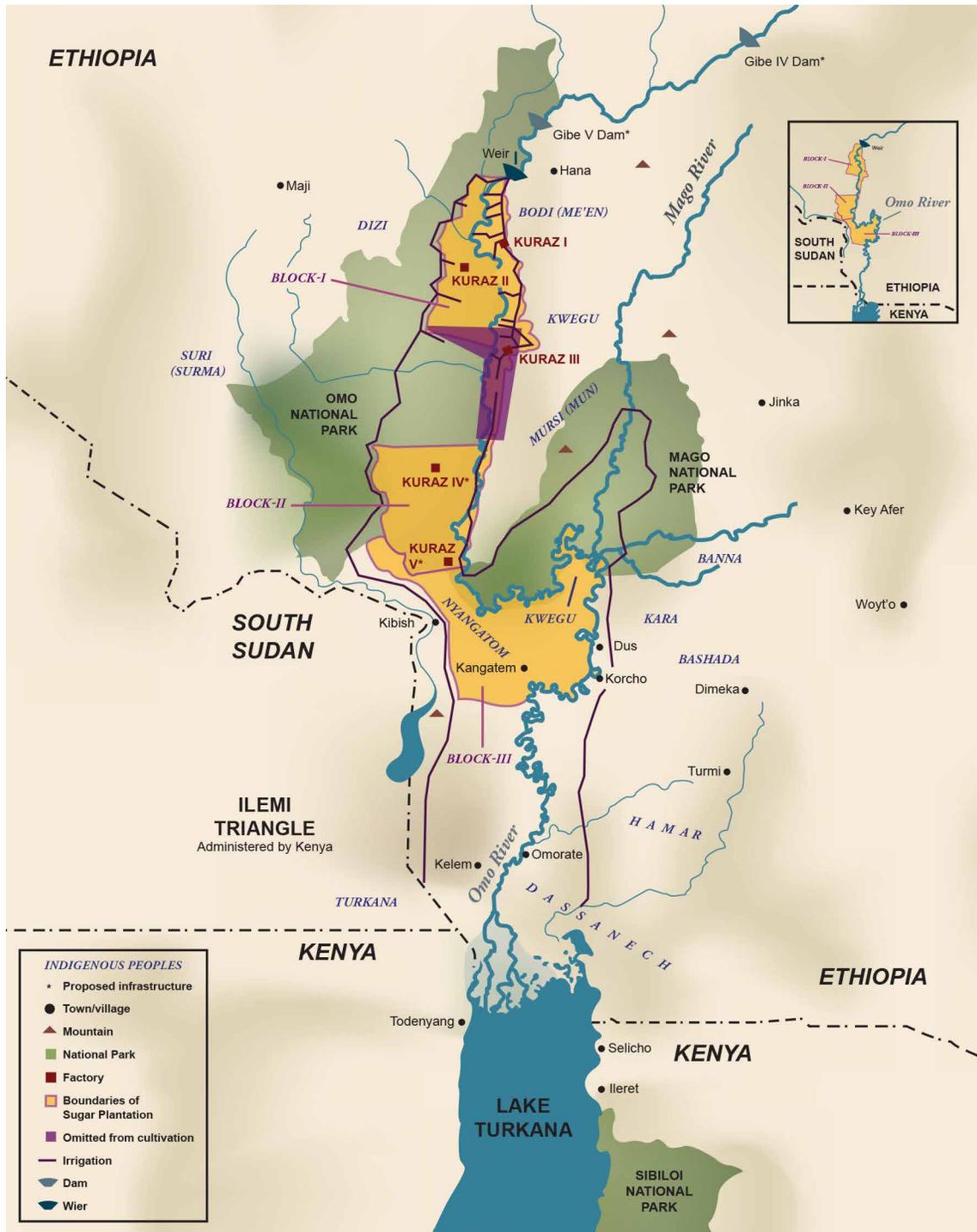
While KSDP has been hailed by some as Ethiopia's "sweet promise", the remoteness of the region and immense scale of the project present major challenges. Five years into the project, the sugar industry in the lower Omo Valley is still in its infancy, which raises doubts about the economic returns and the feasibility of the project. It remains to be seen whether the unprecedented changes already brought to the region and its people will translate into the desired local development push, and how the KSDP will generate a growth stimulus for Ethiopia's economy.

Box 1: KSDP - Dramatis personae

- *MetEC* and *Complant Ltd.* are commissioned for the construction and design work of processing factories.
- Subcontractors include public enterprises (e.g. *Ethiopian Waterworks Design & Supervision Enterprise*, *South Waterworks Construction Enterprise*, *Metals & Engineering Corporation*, *SNNPR Housing Development Enterprise*) and private corporations (e.g. *Santa Maria Construction P.L.C.*, *Yirgalem Construction PLC*).
- Foreign contractors include the German *BMA Braunschweigische Maschinenbauanstalt AG*, which specialises in sugar processing technology, Chinese construction and planning companies (e.g. *Jiangxi Water & Hydropower Construction Company*, *China Communications Construction Company Ltd.*) as well as other consultancy firms such as the Italian firms *SGI* and *Sembenelli Consulting*.

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.

Figure 1. Overview map of the Omo-Turkana Basin showing the planned extent of the Kuraz Sugar Development.



Key Findings

Who are the main actors behind the KSDP, and how is the project funded?

The implementation of the KSDP is the responsibility of the state-owned ESC, the sole organization responsible for directing, coordinating, supervising, and controlling the expansion of the sugar industry in Ethiopia; all project components (e.g. land preparation, cultivation, water works, construction of processing plants) as well as financing needs are coordinated by the ESC. According to the general management more than 20 companies, providing construction, planning, and consultancy services, are involved in the project (See Box 1 on page 1.).

Financing comes mainly in the form of loans and export credits as well as loans from Ethiopian banks, with the Ethiopian Government acting as guarantor.³ It is difficult, however, to draw a line between, on the one hand, companies and financing for the KSDP and, on the other, related but necessary infrastructure construction and the villagization scheme. Regarding the expansion of roads and bridges, the Ethiopian Roads Authority (ERA) acts as the contracting authority, while villagization is generally the financial and administrative responsibility of the Regional and Zonal governments. However, all settlements and infrastructure expenditures on the project site are borne by the ESC.

What is the project's status?

Waterworks and irrigation scheme

A crucial component of the KSDP development is waterworks, which themselves rely on the regulation of river flow by the Gibe III dam upstream. In September 2011, Ethiopian Water Works Construction Enterprise (EWWCE) began the construction of a cofferdam at the headwaters of the project area and a second embankment further downstream. Parallel to the construction of the diversion scheme, the left side main irrigation canal has been excavated to lengths of approximately 35 km. This canal has been used since mid-2013 to deliver water to Block I (see Figure 1) where, through subsequent canals, it feeds individual plots of 15 hectares each. In 2013, an external study commissioned by the ESC recommended a radical restructuring of the cofferdam and alterations to the diversion scheme. These modifications and the

³ There is a great deal of uncertainty regarding the overall financing and no conclusive numbers could be provided by the ESC. Funds are raised and allocated for specific sub-projects (i.e. processing factories, land preparation, water works, road construction etc.) and therefore a consolidated cost calculation is unfeasible at this stage of the project. The *Sugar Industry Development Fund*, a central domestic funding instrument, is largely made up of sales proceeds generated through the operational sugar estates in other parts of the country. Moreover, in 2014, the Ethiopian Government raised close to 1 billion USD through the sale of Eurobond to fund its large-scale development projects.

Box 2: What role for indigenous people in the estate economy?

- The total number of indigenous employees from Salamago Wereda is less than 1,000. ESC has hired 60 local people as machine operators and approximately 150 people as watchmen. MetEC has also employed watchmen from the Bodi, Mursi, and Suri populations and training programs have been launched by the ESC and MetEC. For weeding and other basic works Bodi women are reportedly hired.
- An area of 500 hectares is currently equipped for irrigated agriculture; maize has reportedly been cultivated by Bodi people who have been settled on the estates.
- There are signs that the plots of 0.25 hectares allocated to households in villagization sites are too small and may fail to provide the yields necessary to feed them. The greater part of households continues rain-fed cultivation on plots outside of the project area.

construction of the first part of the 190 km right side main canal started in 2014/15.

Land clearing and cultivation

Land clearance began in 2011 in an area of Salamago Wereda inhabited by the Me'en people, known to outsiders as the Bodi. By October 2014, approximately 10,000 hectares of Block I had been cleared for cultivation on the left command side of the river and 6,600 hectares of sugarcane had been planted. By February 2016, this had increased to 13,000 hectares and an additional 4,000 hectares had been planted. This represents a small proportion of the area that might theoretically be used for cultivation if the three factories under construction run at full capacity (75,000 hectares).⁴ The first sugarcane was planted approximately 28 months ago, while the majority of sugarcane plants are between 15 and 20 months old.

Factories and infrastructure development

The construction of processing factories has begun in Salamago Wereda (Kuraz I, II) and Bench Maji Zone (Kuraz III).⁵ After several postponements, Kuraz I was scheduled to be operational in the second quarter of 2016, albeit at a reduced capacity; recent reports suggest this deadline may be missed. Kuraz II and III, being built by the Chinese company Complant Ltd.,

⁴ The effective area would be larger as approx. 35% needs to be set aside for infrastructure and fallow irrigation.

⁵ The site for Kuraz IV is still under preparation. It is reported that a contract between the ESC and Chinese JJIEC (Jianglian International Engineering Co., Ltd.) has been signed; construction work is scheduled to start in May 2016.

are envisaged to be operational by 2017. Construction of these factories is crucial to the project: In terms of administration, KSDP will be made up of multiple, semi-autonomous estates, each corresponding to one of the factories. Land clearing, soil preparation, and cultivation are being done gradually, geared to the functioning of the factories.

Since the launch of the project, substantial investments have been made in road infrastructure across the region, principally between the Zonal capital, Jinka, and the project site in Salamago Wereda, as well as in Hamar and Nyangatom Weredas. A provisional bridge has been constructed across the Omo River in Kangatem by the China Communications Construction Company Ltd. The project (worth approximately 50 million USD) is expected to be completed in 2018 and includes the construction of a permanent bridge and access road to one of the designated processing factory sites in Nyangatom Wereda.

Villagization and outgrower schemes

During the first project phase, the government planned to permanently settle a total of 1,430 Bodi households and 1,300 Mursi households in Salamago Wereda. Infrastructure for three settlements (mills, healthcare centre, and schools) was installed for the Bodi; installation of infrastructure for Mursi settlements is reportedly underway. Local demand for access to water for livestock led to the construction of cattle crossings and passages under the main irrigation canal as well as separate watering ponds (see Figures 2 & 3). This suggests that local livelihoods are expected to depend in the future on a combination of (semi-mobile) livestock herding and sedentary farming. Due to the delayed commissioning of Kuraz I, outgrower schemes for sugarcane cultivation have not yet been introduced. The villagization scheme remains among the most controversial aspects of the KSDP, and has been beset by problems, including the malfunctioning of the water supply for farming and human needs.

Employment creation

According to the KSDP general manager, a total of 30,000 jobs have so far been created through the

Box 3: Conflicts

- The expansion of large-scale farming and rapid influx of migrants to Salamago Wereda has exacerbated conflicts. The increase in heavy traffic between Jinka and Hana has caused repeated collisions involving both humans and livestock. This in turn has become a central source of conflict particularly in Mursiland, where actions of retaliation have included killing truck drivers and blocking the road.
- Violent confrontations between the Bodi and Konso (the latter resettled to Salamago Wereda by the government in 2004) have increased since the KSDP began; no clear boundaries between the two groups have been established so far, despite repeated assertions made by the Wereda and ESC. Moreover, increased trade in alcohol has led to a growing problem of alcoholism.

project including construction, waterworks, land preparation, and sugarcane cultivation. The ESC directly employs approximately 2,000 people permanently while the same number of people work on the Kuraz I factory building site, including all companies subcontracted by MetEC for this project. The great majority of employees (ca. 29,000) are labour migrants entering South Omo from other parts of SNNPR as well as from the Ethiopian highlands.

What are the prospects for the sugar industry in the Lower Omo?

Cultivation and land clearing

Soil quality and the suitability of land for irrigated sugarcane cultivation vary within the designated project development area. Major limiting factors include drainage conditions (e.g. infiltration rate, hydraulic conductivity etc.) as well as varying levels of soil alkalinity and organic carbon content. Feasibility and design studies for the entire designated project site



Figure 2. Cattle bridge.



Figure 3. Cattle underfly.

are still due to be completed. ⁶Taking into account the strong probability that not all the envisaged project area is suitable for irrigated sugarcane cultivation, it is certain that the net irrigated area will be considerably smaller than initially anticipated.

Revenues and employment creation

In January 2011, the global price for refined sugar reached a 20-year high, selling for 29.74 US-Cents per pound. Since then, global sugar prices have fallen to 14.29 US-Cents, a decrease of nearly 50%; the revenues of the KSDP will be correspondingly lower than anticipated. ⁷Furthermore, as the construction of Kuraz I is more than 12 months behind schedule and the factory is operating for the time being at reduced capacity, short-term revenues are likely to be meagre.

The envisaged permanent creation of jobs in the KSDP, leaving aside the temporary employment in the construction sector, is directly dependent upon the commissioning of the processing factories and, by implication the area cultivated. In absolute terms, provided that Kuraz I, II, and III are operational at full capacity, 300,000 people could be theoretically employed in the cultivation and processing industry. However, if all three factories run at a reduced capacity of 40%, the required estate area reduces to 30,000 hectares and thus direct employment would shrink to 120,000 people.

Environmental impacts

Agricultural-induced impacts on water resources are not yet evident, but are likely to manifest in two major dimensions: repercussions on downstream water availability and changes in water quality. Large-scale soil cover change and intensified land use patterns will definitely affect water yields in the lower catchment of the Omo River and impair groundwater recharge rates. Pollution as a result of fertilizer application is likely to impair water quality and have detrimental impacts on the hydro-ecology of the lower catchment.

If KSDP Block II were developed as planned, the Omo National Park would be reduced in size by several thousand hectares. Although the ESC claims that due consideration has been given to allow wildlife migration, ⁸the project will undoubtedly affect the flora and fauna of the Lower Omo Valley. The disappearance of 'buffer zones', which are vital for biodiversity conservation, will have destructive effects on these ecosystems.

⁶ Water Works Design & Supervision Enterprise (WWDSE) in association with South Design & Construction Supervision Enterprise (SDCSE) carried out a soil survey and land suitability study for a gross area of approximately 12,300 hectares in Salamago Wereda in early 2011.

⁷ See data on world refined sugar prices provided by ERS-USDA: <http://www.ers.usda.gov/data-products/sugar-and-sweeteners-yearbook-tables.aspx#25442>

Transformational impact

A dual transformation process goes along with the idea of turning the Lower Omo Valley into a hydro-agricultural engine of growth: on the one hand, the alteration of the natural landscape and on the other hand, a drastic transformation of the socio-cultural sphere conditioned by labour immigration and state-directed sedentarization of the indigenous population. Although the response to the villagization program is still weak at the current stage of the project, the social impacts of road construction, land clearing, and waterworks are profound. The ending of the seasonal flood of the Omo, caused by the Gibe III dam, and the conversion of riverbank land to estates, has ruled out the practice of flood-recession agriculture, which is a central component of indigenous livelihoods in the Lower Omo Valley.

Concluding Remarks

Among development projects in Ethiopia, the KSDP is second to none in its environmental and socio-economic implications. But the ambitious objectives for the expansion of the sugar industry are far from being achieved. The slow progress in relation to official plans can be attributed to a host of factors: First, the remoteness of the project site and associated lack of basic infrastructure; second, funding shortfalls, due both to exchange rate fluctuations and inflation and to the immense initial investments the scheme requires; and third, the lack of experience of the key planners and contractors involved. An increasingly pressing question is therefore whether the KSDP will be able to meet its objectives, both agro-economic (i.e. sugar revenues) and developmental (i.e. improvement of local livelihoods).

In the short-term, the involvement of companies from both the public and private sectors directly adds to the economic output of Ethiopia and creates employment and training opportunities. The long-term profitability and expected return on investment, however, is highly speculative. As a state-owned enterprise, the ESC is undertaking immense initial investments, which other investors are not prepared to advance. Given currently low global sugar prices, the project is unlikely to yield short term – or even medium term – economic return. The commissioning of Kuraz I, II, and III, accompanied by the expansion of sugarcane cultivation, would be a crucial milestone for the KSDP but might mark the limits to the sugar industry in the region.

A critical issue, on which the success of the project may depend, is the inclusion of the indigenous population. The permanent alteration of the hydrological cycle through upstream damming has ruled out the continuation of agro-pastoralist livelihoods. Recon-

⁸ A section of roughly 9,800 hectares located between Omo National Park and Mago National Park, which links Block I with Block II, is omitted from cultivation to allow wildlife migration.

struction of livelihoods, therefore, is essential and if not accomplished might tip the scales between success and failure for the KSDP. Although the ESC shows concern for the compensation of local communities and acknowledges weaknesses in the implementation of the project, fundamental misconceptions about socio-cultural realities are likely to be a key obstacle compromising Ethiopia's quest to transform the Lower Omo Valley into an effective growth generator.

For more information, see: Kamski, B. (2016). The Kuraz Sugar Development Project (KSDP) in Ethiopia: between "sweet visions" and mounting challenges. *Journal of Eastern African Studies*, 10(3), 568-580. <https://doi.org/10.1080/17531055.2016.1267602>

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Data Sources

Visits to the project site in June and November 2014, February 2016. Information provided by the KSDP General Management, ESC Directorate for Planning & Design, Irrigation & Housing Infrastructure Directorate, and Public Participation & Organization Directorate.



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