



Scoping report on the status of biofuel developments in Ethiopia

Country scoping report study for an ODI project on
recent biofuel developments in five developing
countries

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Contents

1.	Introduction	2
2.	Methodology and Approach	2
3.	Status of Biofuels Projects	3
4.	Factors Affecting the Status of Biofuels Projects	4
	References	7

Tables

Table 1:	Summary of projects currently operating in Ethiopia as of December 2012	3
Table 2:	List of biofuel projects in Ethiopia as of December 2012	5

1. Introduction

Rising world fuel prices, the growing demand for energy, and concerns about global warming are the key factors driving the increasing interest in renewable energy sources, and in biofuels in particular (Rosegrant et al., 2006). This is more relevant for countries like Ethiopia that spend a considerable share of foreign currency reserves on fuel imports and consumes considerable biomass for domestic energy consumption. In 2005/06 fiscal year, Ethiopia used 86% of total export earnings on fuel imports. Biomass accounted for about 92% of the country's total energy demand (Alebachew, 2009).

Cognizant of the importance to the national economy in general and to the energy sector in particular, the Ethiopian government has developed a strategic document on biofuels development and utilization (MoME, 2008). The strategy has twin objectives of achieving energy security via diversifying the energy sources in the country and lowering exposure to the price volatility in international oil markets. The strategy justifies the economic viability of biofuel development in the country in terms of saving scarce foreign currency reserves through import substitution, generation of jobs, rural development, foreign exchange earnings from export of biofuels and accessing funds through carbon trading (Alebachew, 2009).

Under the current scenario, the share of diesel energy requirement is about 58% of the total energy requirement in Ethiopia. In this regard, it seems that the priority for ethanol based biofuel development is highly associated with the sugar industry. The government promotes this strategy through the establishment of the public Ethiopian Sugar Corporation (ESC), which is given the mandate of expanding and developing huge sugar estates along with processing capacity. The biodiesel development is expected more from the private sector mainly foreign investment.

A number of biofuel projects have been implemented through both public and private investments. This short report presents the current status of biofuel related projects in Ethiopia.

2. Methodology and Approach

The required information was collected from the Agricultural Investment Support Directorate of Ministry of Agriculture, Ethiopian Sugar Corporation (ESC), and Ethiopian Investment Agency (EIA). In order to ensure reliability of the information, the data collected from the EIA and Sugar Corporation was checked with experts of the Agricultural Investment Support Directorate of the Ministry of Agriculture. This process revealed there are companies that are licensed to operate but without any authorized land or there are companies that are licensed to operate with authorized land in the database but who have abandoned their engagement in projects.

Therefore, the list of projects that are identified in this report are those for which adequate information of their status was available.¹ Because of the on-going politicized discussion about land grabbing, some of the information about projects are not publicly available— mainly on land allocated and the status of operation of the projects. Thus, where up to date information was not available, information collected during a similar exercise in 2012 was used. The attempts to communicate with respective companies that run the projects were also helpful though adequate information but did not yield all the information required by the survey.

¹ The key challenge in collecting reliable information is that there are investors who are licensed to operate but do not receive land. Although now the licensing and provision of land is centralized at federal level, the challenge was that regional governments and Woreda officials previously also provided land. Thus, the list of projects presented here are those which could be confirmed both at the Investment Agency and also the MoA, which confirms they exist.

3. Status of Biofuels Projects

Biofuel development in Ethiopia consists of projects using sugar cane for ethanol and Jatropha and castor beans for biodiesel production. Ethanol production is linked with the public sugar estates and biodiesel with private investment.

There are about 33 biofuel projects that are mainly under pre-implementation or implementation phase in the country (Table 1 and Table 2). Both the public and private sector are engaged in the investment. The general trend in the country is the development of ethanol production is linked with the sugar industry development through public investment. Accordingly, the expansion of big three sugar estates is completed (Fincha, Methara, and Wonji sugar estates with their respective factories) and the construction other five sugar estates is underway and it is expected that in two years' time (by 2014), all of them will be fully operational. **The main product of these will be sugar, and molasses for ethanol will be produced as a by-product.**

On the other hand, the development of biodiesel sector is led by the private investment both domestic and foreign, and 25 projects have been so far authorised. However, only one company engaged in castor beans production has started farming and exporting feedstock (without local processing). The other companies are in either the pre-implementation phase or trying to change implementation plans and are not producing. The discussion with experts in the Investment Support Directorate of the Ministry of Agriculture indicated that a number of authorised projects for biodiesel production are requesting to change the original plan mainly in relation to the challenges faced in producing Jatropha, which is no longer attractive given predicted prices for oil and biodiesel.

This indicates that though biodiesel projects have been authorised since 2006, there is no any biodiesel production in the country yet except a project that is engaged with castor beans production, which has started exporting the beans.

The authorisation of projects for biodiesel is mainly in areas that are marginal with low probability of use for conventional agricultural production. In contrast, the sugar based biofuel production is in areas with irrigation potential and it seems that the current concerted effort that is underway by the Ethiopian Sugar Corporation will achieve the target of 25% ethanol-benzene blending by 2015, which increased from 5 to 10% blending in 2011.

Table 1: Summary of projects currently operating in Ethiopia as of December 2012

	Ethanol	Biodiesel	Total
Number of projects authorised	8	25	33
Number of projects implemented	3	1	4
Total area authorised (ha)	0 ²	575,902	1,006,182
Current area under cultivation (ha)	47,280	15,000	62,280
Planned area for cultivation (ha)	430,280	575,902	1,006,182
Current output of biofuel (M3)	20,000,000	0	20,000,000
Planned output of biofuel (M3)	130,316.00	NK	130,316.00

Source: EIA and MoA, Jan 2013

Note: NK - not known

² 430,280 ha are under production for sugar but projects aim to produce ethanol through the molasses by-product.

4. Factors Affecting the Status of Biofuels Projects

The policy framework for the investment in biofuels in Ethiopia is highly associated with the motivation to search for alternative fuel sources to reduce the burden on foreign currency linked with the import of petroleum. The biofuel sector development strategy of the country stipulates three key areas: (i) allocation of land that are marginal and dominantly not suitable for conventional farming; (ii) promotion of the engagement of small-scale farmers through contract or out growers scheme whenever possible; and (iii) targeting of both domestic and export markets.

The biofuel development is associated also with the policy directions of commercial farming in the country. Since 2010, the federal government allocates land from the national land fund, which is a collection of land allocated by regional governments and managed by the MoA. In general, priority in land allocation is given for investments related with production of edible oil, cotton and other similar sectors that have the potential to substitute imports. In a similar manner, investment in biofuel is given but for lands that are marginal.

Though a number of biofuel projects were authorised, the realisation of the projects seems to be very low except for the public sugar industry that produces ethanol activities. The data from 2009 indicates that there were 52 biodiesel and six ethanol projects authorised by the Investment Agency and in Jan 2013, the number of projects that are registered by the Investment Agency is 25 for biodiesel and 8 for ethanol. It seems that, except for the castor based biodiesel projects, other biodiesel projects will not be operational as there are questions of feasibility. This is especially the case for Jatropha based biodiesel. Experts at the MoA suggest that Jatropha based biofuel production could be feasible if it is run through outgrower scheme especially if linked with the on-going natural resource conservation measures like hill terraces etc. It reported that some of investors used the biofuel investment as one way of acquiring a large size of land without realising what it requires to be operational and whether it is feasible.

Key factors affecting the biodiesel-based projects especially those that are based on jatropha is the limited feasibility mainly associated with low productivity, the high cost of labour due the limited uniformity of the crop and its maturity, and the current price of fuel. Moreover, other production activities on the land may bring larger benefits to investors.

Table 2: List of biofuel projects in Ethiopia as of December 2012

Feedstock	Project	Investment Type (Public, domestic private, foreign private)	Area (ha)	Location	Current Status of implementation
Sugar cane ³	Fincha Sugar Factory	Public	21,000	Oromiya	Operational
	Metahara Sugar Factory	Public		Oromiya	Operational
	WONJI / SHOA SUGAR FACTORY	Public	16,000	Oromiya	Operational
	Tendaho Sugar Development Project	Public	50,000	Afar	Implementation
	Wolkaiyt Sugar Development Project	Public	45,000	Tigray	Implementation
	Kuraz Sugar Development Project	Public	175,000	SNNPR	Implementation
	Kessem Sugar Development Project	Public	20,000	Oromiya	Implementation
	Belles Sugar Development Project	Public	75,000	Amhara	Implementation
	BDFC Ethiopia Industry P.L.C	Foreign	18,000	Amhara	Pre - implementation
Castor	Acazis Ethiopia PLC	Foreign	15,000	Oromiya	Operational
	Global Energy Ethiopia	Foreign	2,700	SNNPR	Implementation
	HUSEYIN POLAT	Foreign		Oromiya	Implementation
Jatropha	Sun Biofuels Ethiopia/National Biodiesel Corporation	Foreign	80,000	Benishangul Gumuz	Pre - implementation
	Ambasel Jatropha Project	Domestic	20,000	Benishangul Gumuz	Pre - implementation
	Agro peace bio Ethiopia	Foreign	80,000	Multiregional	Pre - implementation
	African Climate Exchange PLC	Foreign	100,000	Multiregional	Pre - implementation
	Energy seeds Ethiopia PLC	Foreign	2	Multiregional	Pre - implementation
	Africa Ethiopia Biomass Energy PLC	Foreign	NK	SNNPR	Pre - implementation
		Ertale Bio Diesel PLC	Foreign	NK	Multiregional

³ Note that the primary product from sugarcane production is sugar. Ethanol is a by-product made through processing of the molasses.

					implementation
	2H 2S International Business PLC	Domestic	100,000	SNNPR	Pre - implementation
	Ethiopia Bio Power PLC	Domestic	NK	SNNPR	Pre - implementation
	Green Energy plc	Domestic	50,000	SNNPR	Pre - implementation
	National Energy PLC	Foreign	NK	Oromiya	Pre - implementation
	OBM Ethio Renewable Energies PLC	Foreign	50,000	Oromiya	Pre - implementation
	F.E.P.E.Amaro Bio-Oil PLC	Foreign	50,000	SNNPR	Pre - implementation
	J.M.B.O Bio Fuel Production PLC	Foreign	2,000	Oromiya	Pre - implementation
	Paul Morrell	Foreign	1,000	Oromiya	Pre - implementation
	Soubra Abdallah Khalid	Foreign	10,000	Oromiya	Pre - implementation
	The Giving Tree Nursery PLC	Foreign	200	Oromiya	Pre - implementation
	Ardent Energy Group,INC.	Foreign	NK	Multiregional	Pre - implementation
	FB BIODIESEL PLC	Foreign	NK	Amhara	Pre - implementation
	Slishi Atile Dessta	Domestic	NK	Addis Ababa	Pre - implementation
	Sayo Biofuel plc	Domestic	NK	Tigray	Pre - implementation

Source: EIA and MoA, Jan 2013

Note: NK - not known

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