

## **IPDEV Work Package 6:**

# **ASSESSING THE ECONOMIC IMPLICATIONS OF DIFFERENT MODELS FOR IMPLEMENTING THE REQUIREMENT TO PROTECT PLANT VARIETIES**

## **CASE STUDY ON ETHIOPIA**

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## The legal environment of seed markets in Ethiopia - Is coffee faring better outside the FAO multilateral system?

Muriel Lightbourne 2006

In the course of the lengthy negotiations of the FAO International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR), adopted in November 2001, the Ethiopian government decided not to include coffee in the list, annexed to the treaty, of plants covered by the multilateral system of free germplasm flow. The rationale for this decision was that the Convention on Biological Diversity (CBD) gave the opportunity for genetic resources-rich countries to enter bilateral agreements to value their genetic resources. In 2005, the Government of Ethiopia prepared many Proclamations, Regulations and Guidelines dealing with biosafety, traditional knowledge, and plant breeders' rights, with a view to implementing the CBD, the Cartagena Protocol to the CBD, and to joining the World Trade Organisation, where Ethiopia has an observer status. The purpose of this paper is to analyse these texts after a rapid description of the general context of seed production and seed markets in Ethiopia, and to try to assess their possible impact on the coffee market.



Source: Wikipedia

## 1 – Introduction to Ethiopia

### 1.1 Geography

The size of Ethiopia is roughly of 1,120,000 km<sup>2</sup>, and the country has a population estimated at 73 million inhabitants as of mid-2005. The country occupies the major part of the Horn of Africa, which is one of the biodiversity hotspots<sup>1</sup>. The varied relief (massive highlands divided by the Great Rift Valley, and surrounded by lowlands and semi-deserts) determines a variety of climates, soils, vegetation and settlement patterns. There are three zones: the cool zone above 2,400 m (the capital of Ethiopia, Addis Ababa, is located in the middle of the country at 2,500 m), the temperate zone at elevations comprised between 1,500 m and 2,400 m, and the hot zone (which includes both tropical and arid zones) below 1,500 m.

Ethiopia was divided by the EPRDF into 9 states within a federal country, on the basis of ethnical criteria:

- Afar,
- Amhara,
- Benilshangul-Gumaz,
- Gambela,
- Harari,
- Oromia,
- Somali,
- Southern Nations, Nationalities, and Peoples Region (SNNP),
- Tigray.

Addis Ababa, located in Oromia and the capital of this state again since the general elections organised in May 2005<sup>2</sup>, was also given a special status, like the city of Dire Dawa (North-West of Addis Ababa, also located in Oromia region). Covering 353,632 km<sup>2</sup> from the East to the South-West of the country, Oromia is by far the biggest state. Oromia is also home to the region of Kaffa, in the Southwestern part of the Ethiopian highlands, where coffee was first discovered. The National Coffee Research Centre at Jimma, maintaining *ex situ* over 2,000 coffee accessions from different parts of the country, is also located in Oromia.

Although Oromo, Amhara and Tigrayans account for three-fourths of the Ethiopian population, the latter is much more diverse than the number of states suggests, as it counts more than 80 different ethnic groups and as many languages. Most of the population (75 – 80%) works in agriculture, which is mainly of a subsistence nature, although a large part of the country's exports are provided by the small cash-crop sector.

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<sup>1</sup> As research into the flora of the Horn of Africa is still ongoing, current estimates are that there are about 5,000 species of vascular plants, of which 2,700 are endemic. However, the “Horn of Africa is under heavy pressure from human activity, and is one of the most degraded hotspots in the world, with only about 5 percent of original habitat in relative pristine condition (...) Overgrazing and subsequent land degradation is a problem in large area of the hotspot.” – see [http://www.biodiversityhotspots.org/xp/Hotspots/horn\\_Africa/impacts.xml](http://www.biodiversityhotspots.org/xp/Hotspots/horn_Africa/impacts.xml), last visited 13 September 2005. Ethiopia is one of the 12 Vavilov centres of diversity (along China, India, Russia, Colombia...)

<sup>2</sup> For some time, the capital of Oromia had been Adama (also known as Nazret or Nazareth) (South-East of Addis Ababa), perhaps in order to curb the importance of Addis Ababa.

## 1.2 The economic weight of agriculture

Agriculture accounts for 45% of the Ethiopian GDP, 80% of total employment and 85% of exports (75% according to AfDB-OECD 2005)<sup>3</sup>. The total exports of Ethiopia rose from US\$ 452.3 million in the fiscal year<sup>4</sup> 2001-2002, to 600.7 in 2003-2004. The major exports are shown in the chart below:

Commodity	2001-2002	2002-2003	2003-2004
<b>Coffee</b> (US\$ miln)	163.2	165.2	223.6
Price (US\$/kg)	1.48	1.31	1.4
<b>Chat</b> (US\$ miln)	49.0	58.0	88.1
Price (US\$/kg)	5.23	9.6	17.6
<b>Oilseeds</b> (US\$ million)	32.6	46.1	82.7
Price (US\$/kg)	0.43	0.56	0.78
<b>Other exports</b>	207.5	213.4	206.3
<b>Total exports</b>	452.3	482.7	600.7

Source: FAO/World Food Programme *Crop and Food Supply Assessment – Mission to Ethiopia*, 28 January 2005, p. 5, quoting Customs Authority, National bank of Ethiopia, Coffee and Tea Authority.

As can be observed from this chart, coffee represents one third of total exports. The world price of coffee has recovered to a small extent lately, as will be discussed in part 3. However, the sharp increase in the price of chat<sup>5</sup> (three-fold over three years) explains why this crop tends to replace coffee lately.

Imports have soared as well, as can be seen in the following chart:

Commodity(US\$mIn)	2001-2002	2002-2003	2003-2004
Fuel	-	-	310.6
Semi-finished goods	-	-	435.3
Consumer goods	-	-	895.8
Capital goods	-	-	876.7
Miscellaneous	-	-	43.1
<b>Total imports</b>	1,695.7	1,856.4	2,587.4

<sup>3</sup> African Development Bank – Organisation for Economic Co-operation and Development *African Economic Outlook – Ethiopia*, 2005, p. 227.

<sup>4</sup> The Ethiopian fiscal year runs from 1<sup>st</sup> July to 30 June. Besides, Ethiopia follows the Julian calendar, which is eight years behind the Gregorian calendar and includes twelve months of 30 days and a thirteenth month of 5 or 6 days.

As to grain exports, they were banned by the Derg, a Marxist-Leninist military junta that deposed Emperor Haile Selassie in 1974. The Derg was in turn defeated in 1991 by the Ethiopian Peoples' Revolutionary Democratic Front (EPRDF), a coalition of rebel forces. The ban on grain exports was lifted in 1996 only, according to Wolday Amha and Eleni Gabre-Madhin *Structure and Conduct of Grain Marketing in Ethiopia*, IFPRI Workshop Summary Paper 17 on *Policies for Improved Land Management and Agricultural Market Development in the Ethiopian Highlands*, Addis Ababa, Ethiopia, February 19-20, 2004.

<sup>5</sup> Chat (Khat, Kat, Qat) or *Celastrus edulis* is a shrub that grows in Eastern Africa and in the Arabian Peninsula and whose leaves contain amphetamine-type compounds.

Source: FAO/World Food Programme *Crop and Food Supply Assessment – Mission to Ethiopia*, 28 January 2005, p. 5

Ethiopia per capita GDP amounts to about US\$100. Following the overthrow of the Derg regime in 1991 and the ensuing reforms, the Ethiopian real GDP has been growing in average by about 5 percent per year over the decade ranging from 1991/92 to 2001/02, while inflation has been relatively contained. As underlined in the World Bank report on Ethiopia<sup>6</sup>, these positive developments were achieved despite the border war of 1998-2000 with Eritrea, and the continued decline in coffee prices since 1997/98.

Between fiscal years 2001-2002 and 2003-2004, the National Bank of Ethiopia has built up a net foreign asset position and Ethiopia benefited from the enhanced HIPC relief assistance<sup>7</sup>. However, the debt relief could hardly compensate for the drastic increase in the world prices of fuel products and fertilisers. Overseas Development Aid received by Ethiopia has risen from US\$ 925 million in 2000 to US\$ 1,920 million in 2003, of which on average 33% are allocated annually to humanitarian assistance, compared to 6% to agriculture and 10% to transport infrastructure. The proportion of food aid to food grain production decreased from 12.6% in 1984-85 to 7.1% during the period from 1991-92 to 1999-2000. The nature of food aid changed as well: whereas the bulk of food aid was in kind until 1994-1995, which had an adverse effect on domestic food prices and food production, it now tends to be replaced with aid in cash. However, with a population growth of 2.9% per year and the overall cereal production increasing by 1.7% per year<sup>8</sup>, Ethiopia is not self-sufficient.

The agricultural sector is almost completely dependent on rainfall, with only 2 percent of the total arable land being irrigated (190,000 hectares out of 11 million ha). According to FAO/WFP figures, the proportion of area sown to improved seeds is less than 3 percent and the proportion of area treated with pesticides represents less than 10 percent. Additionally, the agricultural system of Ethiopia is characterised by low fertiliser inputs and extensive highland soil erosion.

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<sup>6</sup> See World Bank News release no 2004/331/PREM, available from <http://web.worldbank.org>, last visited 23 January 2006.

<sup>7</sup> In 1996, the World Bank and the International Monetary Fund launched the HIPC Initiative to create a framework for all creditors, including multilateral creditors, to provide debt relief to the world's poorest and most heavily indebted countries. The goal was to reduce the constraint on economic growth and poverty reduction imposed by the debt repayments made by these countries. The Initiative was modified in 1999 to provide three key improvements:

- lowering of external debt thresholds,
- facilitating a faster relief,
- creating a stronger link between debt relief and poverty reduction, by the allocation of freed resources to national poverty reduction strategies.

Total debt service relief under the enhanced HIPC Initiative from all of Ethiopia's creditors amounts to approximately US\$3.3 billion in nominal terms.

<sup>8</sup> Figures quoted by Tadesse Kuma *Trends in agricultural production, technology dissemination, and price movements of outputs and inputs*, paper presented at the Policy Forum on Agriculture Technology Diffusion and Price Policy – Ethiopian Development Research Institute – International Food Policy Research Institute, Addis Ababa, Ethiopia, March 25, 2002, p. 36.

## 2 – Access to land and markets

### 2.1 – Land tenure

The first problem facing agricultural production in Ethiopia is access to land.

Before the Derg came to power in 1974, the land regime was diversified depending on the region. The Derg declared that land belonged to the Ethiopian State and since its fall, there has been a soft transition rather than a drastic change. The Federal Constitution adopted in 1991 states that land belongs to the State and citizens are only entitled to use rights, defined at the Federal and the Regional levels. The Federal Proclamation no 280/2002 which constitutes a “Re-enactment of the Investment Proclamation” provides for instance that “[w]here a regional Government receives an application for the allocation of land for an approved investment, it shall, on the basis of the Federal and its own laws, deliver within 60 days the required land to the investor.”

In order to avoid too frequent re-allotments, land leases can be obtained for different durations ranging from 25 to 50 years according to the region and the contemplated use of the land. Such leases are transferable. The four main regions of Ethiopia have adopted proclamations on land use in 2002-2003, in particular in the North (Tigray and Amhara). Proclamations were adopted in Southern regions in 2003 but no demarcation has been carried out there, leaving both investors and poor migrants free to clear forest areas (in particular coffee seedlings).

In Oromia, the Proclamation no 46/2001 is meant “to enforce the Oromia Regional State Revised Constitution of 2001”.<sup>9</sup> Art. 40.1 of the Oromia Revised Constitution declares that “[e]very resident of the Region has the right to the ownership of private property. This right shall include the right to acquire, use and dispose of such property by means of sale or bequest or other means of transfer (...)” However, the following paragraph introduces a clear restriction as to the subject matter of such rights:

“Private Property” for the purpose of this Article, means any tangible or intangible product produced by the labour or creativity or capital of an individual resident, or association which enjoys juridical personality under the law, or in appropriate circumstances, by communities specifically empowered by the law to own property in common.

This definition includes immovable property. The property right so defined is associated with an expropriation right on behalf of the Oromia State, in the public interest and provided it pays in advance compensation commensurate to the expropriated property.

Art. 40.3 states that:

The right to ownership of rural and urban lands as well as natural resources is exclusively vested in the State and the people of the region. Land belongs to the

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<sup>9</sup> Published in *Megeleta Oromia* (gazette) dated July 12, 2000.

people of the region and shall not be subject to sale or any other mode of transfer of ownership.

4. Any farmer of the Region shall have the right to obtain, without payment, the use of land and shall not be dispossessed thereof (...)

5. Pastoralists of the Region have the right to free land for grazing and cultivation as well as the right not to be evicted from the lands they traditionally hold (...)

Art. 47.2 (c) provides that the Regional State shall administer the lands or other natural resources of the Region in accordance with the laws enacted by the Federal State.

The Proclamation no 3/1995 provides for “the use of rural of land for investment in the Oromia region”.<sup>10</sup> Art. 8.2 of Proclamation 3/1995 declares that “[t]he duration of the contract of lease shall not exceed thirty years.” However, a lease contract may be renewed by the appropriate body (Art. 8.5).

Art. 14 reads as follows: “Any investor shall be obliged to protect and preserve the natural resources of the land and in particular, he shall:

a) plant suitable species of trees to replace trees, bushes and shrubs which may be removed in the course of clearing the site (...)

b) apply proper soil management practices in steep and sloppy areas susceptible to erosion (...)”

Where an investor is unable to continue his project, he shall have the right to transfer his holding upon obtaining permission from the appropriate body. Where he dies before the expiration of the lease period, his heirs shall have the right to succeed and continue with the investment for the remaining duration of the lease (Art. 16). The lease contract may also be terminated by the investor prior to its term upon a six-month prior notice (Art. 20). The Proclamation has a retroactive effect on investors, whereas farmers’ holdings leased prior to the entry into force of the Proclamation shall be governed by specific directives (Art. 22 and 23).

The Proclamation no 8/1995 deals with “the rural land use rent and agricultural activities income tax in Oromia”. Its first Recital states that “the tax on income from agricultural activities and the land use rent does not give due consideration to financial positions of farmers and the role of agricultural in the national economy”. This Proclamation determines the annual rural land use rent, which may be deducted from the basis of calculation of the income tax, along with expenses incurred for fertilizers, improved seed grains and other inputs directly required to realize the annual harvest.

Nevertheless, 25% of all respondents of the IFPRI survey revealed that the multiple taxes levied at the different administrative levels (states, zones and woredas or districts) on farmers constitute the major constraint in grain trade in Ethiopia.<sup>11</sup>

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<sup>10</sup> Published in *Megeleta Oromia* dated 21<sup>st</sup> August 1995.

<sup>11</sup> See footnote 4, p. 63-64.

The size of land plots is also problematic: it ranges in average between 0.5 and 1 ha, on which farmers grow both subsistence and cash crops. A second type of difficulty lies with road networks, on which farmers rely to market their production. The Derg had instituted restrictions not only on grain exports, but also on grain movements within Ethiopia, from surplus areas to food-deficit ones. Since these restrictions have been lifted, the main impediment remains the number and state of roads.

## 2.2 – Roads and infrastructures

There are 23,812 roads, i.e. 21 km of roads per 1,000 km<sup>2</sup>, out of which 3,478 km are asphalt. A 778 km-long railway links Addis Ababa to Djibouti. This line is crucial for the Hararghe region, which used to produce essentially coffee and is currently switching to chat, for export to Djibouti, Somalia and the Middle East.

The Ethiopian Government is implementing a road programme in cooperation with donors to improve inter-regional road networks. According to the Amha and Gabre-Madhin (2004), the result of a survey of grain operators suggested that “the improvement in rehabilitation and building new roads has resulted in the increase in the number of transporters after the market reform of 1991.”<sup>12</sup>

The second problem in terms of infrastructures is storage. It is estimated that most of the storage capacity is owned by state enterprises. About 32.4% of the total storage capacity belongs to the Ethiopian Trading Grain Enterprise, a major parastatal wholesaler. However, the IFPRI survey<sup>13</sup> reveals that most grain traders have permanent storage facilities in town markets.

## 2.3 - Access to credit and inputs

Several observers have highlighted the negative impact on grain prices of the concentration of sales over a few months, during which the demand for finance and transport is high.

### *Credit constraint*

Overall, about 71% of the IFPRI survey respondent in Oromia considered that it has become more difficult to obtain credit since the 1991 reform. The major constraint in accessing financial resources is the requirement by commercial banks of high property collateral, except for fertilizer credit. However, to be eligible for a fertilizer credit, a farmer must show that he has settled his previous debt within the prescribed term, generally right after the harvest, according to Kuma (2002). That author underlines that in the immediate post-harvest period, prices tend to be low. Thus, “extending the time for repayment until crop prices rise would enhance the benefit farmers obtain from using fertilizer.”<sup>14</sup> This would also require an increase in storage capacities.

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<sup>12</sup> See footnote 4, p. 59.

<sup>13</sup> Ibid., p. 61.

<sup>14</sup> See footnote 8, p. 46.



A recent AfDB-OECD report<sup>15</sup> gives a brighter description of the evolution of the Ethiopian financial system, which consists of commercial banks, micro-finance institutions and financial cooperatives. The commercial banks include six private banks and three state-owned banks: the Commercial Bank of Ethiopia (the most resorted to according to various communications), the Construction and Business Bank and the Development Bank of Ethiopia. At the regional level, in Oromia, the Cooperative Bank of Oromia has started operating in 2004, with branches in seven zones (including Addis Ababa). More branches are due to open in a near future, to facilitate access to credit for farmers.

### *Fertilizers*

Until 1992, the Agricultural Input Supply Corporation, a state-owned company, controlled the fertilizer market. Fertilizers were rationed and state farms would receive most of the quantities allocated. The EPDRF Government pledged to liberalise the fertilizer market and to create a multi-channel distribution system.

The national annual consumption of fertilizers grew from 0.1 kg per hectare of cultivated land in 1974 to 4 kg/ha in 1985-86 (drought year). It then rose from 22 kg/ha in 1991-1992 to 35.4 in 1999-2000, despite a strong increase of fertilizer prices. The Participatory Demonstration and Extension Training System (PADETS programme), initiated by Sasakawa Global 2000 and the World Bank in Oromia and SNNP, revived the consumption from 1995-1996 onwards, after a plunge due to currency devaluation in 1993. The PADETS programme promoted the use of fertilisers and improved varieties for barley, wheat, maize and sorghum. However, due to highly variable rainfalls, the project failed, leaving many farmers indebted and obliged to forfeit their land plots.

### *Agrochemicals*

As to agrochemical products such as pesticides or herbicides, it seems that they have been imported mainly to be used by state farms. Total imports of agrochemicals fell from 4 tonnes in annual average from 1983 to 1991-92 to 1.5 tonnes for the period 1992-93 to 1998-99.

### *Improved seeds*

Under the Derg regime, the state-owned Ethiopian Seed Corporation was the sole distributor of seeds produced by itself or state farms. Although prices were kept low, farmers would rather resort to saved seeds of local varieties. The ESC was restructured and renamed as the Ethiopian Seed Enterprise in 1993. Prices were deregulated and the private sector was allowed to participate in the production of improved seeds. Nonetheless, the market for improved seeds remains concentrated with the ESE providing more than 90% of improved seeds (between 15,000 and 20,000 tonnes, according to Kuma (2002), and up to 25,000 tonnes, according to the ESE<sup>16</sup>, accounting for 10-14% of the total seed requirement of Ethiopia). The annual

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<sup>15</sup> See footnote no 3, p. 228.

<sup>16</sup> Personal communication from Mr. Getahun Alemu, General Manager, Ethiopian Seed Enterprise, on December 15, 2005.

seed needs of Ethiopia are estimated at 140,000 tonnes, of which 86% are met by farm-saved seeds.

### 3 – Markets organisation

#### 3.1 – Description of the distribution channels

Farmers used to be required to sell an important amount of their production at a fixed price to the state-owned Agricultural Marketing Corporation created in 1976, and which was restructured and renamed Ethiopian Grain Trade Enterprise in 1992. In 1999, the status of EGTE was revised again, and its role reoriented to operate in export markets as a commercial enterprise and to stabilise grain prices by maintaining buffer stocks (about 30% of its total grain purchase)<sup>17</sup>. After the grain market liberalisation, prices have increased, and then decreased since 1995-96 owing to an exceptional harvest. EGTE has started operating a seed warehouse system since 2005: farmer cooperatives bring their produce (in cereals, pulses and oilseeds) to EGTE for storage. EGTE charges them for this service and issues a certificate that is used as a collateral to obtain a bank loan.

Only 29% of grain produced is marketed. Of this, 31.4% are sold directly from producers to consumers, and 35.5% are sold to inter-regional traders. The grain market seems lopsided to the advantage of wholesalers: “43% of the grain marketed in Ethiopia is purchased by 10% of the largest grain wholesalers.”<sup>18</sup> There are numerous unlicensed and licensed grain traders. In Ihel Berenda, the largest grain market in Ethiopia, there are more than 1,000 unlicensed grain traders and 250 licensed ones. The different categories of operators are described as follows in the IFPRI survey: assemblers, wholesalers, processors, and brokers.

##### *Assemblers*

They are traders or part-time traders who collect grain from farmers (individual farmers or cooperatives), village markets or town markets.

##### *Wholesalers*

Some are parastatal such as the Ethiopian Trading Grain Enterprise, some are based in deficit regions and purchase in bulk from central markets such as Addis Ababa or from regional wholesalers and sell in deficit markets, and some are regional wholesalers, buying from surplus areas, from farmers, assemblers or other wholesalers and selling to the central markets or deficit markets.

##### *Processors*

They are owners of grain mills who process the grain and sell their products to traders or directly to consumers.

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<sup>17</sup> See Tenkir Bongor, Eleni Gebre-Madhin and Suresh Babu (Ed.) *Agriculture Technology Diffusion and Price Policy* – Policy Brief 1, IFPRI, Addis Ababa, Ethiopia, June 2002.

<sup>18</sup> See footnote no 4, p. 51.

### *Brokers*

They are of two types: some provide storage facilities, pay transportation costs on behalf of the regional wholesalers when the latter fail to sell their produce, and they arrange the return of empty bags. Brokers of the second type only facilitate the sales of grain.

### *Retailers*

Retailers are traders who buy directly from farmers on town markets (spot market) and sell to consumers at different locations and times.

## 3.2 – A crucial operator: the Ethiopian Seed Enterprise

The ESE is supervised by the Ministry of Agriculture and Rural Development. As already mentioned, its main role consists in providing improved seeds. Actually, this role is three-fold, as it entails breeding, multiplying and distributing improved seeds. These are received both from breeders and from the Ethiopian Agricultural Research Organization (described below). The concerned crops are essentially cereals (wheat, barley, maize, teff), oilseeds (sesame, mustard), and pulses (faba bean and field peas - generally used as forage for livestock). In the long run, ESE is deemed to concentrate on high value crops such as vegetables, and leave cereals, pulses and oilseed crops to private seed producers.<sup>19</sup>

ESE runs four basic seed farms in different parts of Ethiopia, where the improved seeds received are multiplied. ESE out-contracts a part of this multiplication activity: it contracts with farmers (about 15,000 – 20,000 local farmers on 5,000 ha, 10 individual private farms of 20 – 100 ha each, 5-6 public large-scale farms of about 10,000 ha each, and state farms) to produce certified seeds, then buys these back and processes them in its basic seed farms. The seeds are checked as to their germination, purity and health characteristics in laboratories that ESE maintains in all its sites. The overall production of improved seeds by ESE (including those multiplied by farmers) ranges between 200,000 and 250,000 quintals. The Ministry of Agriculture and Rural Development then carries out a second check, in the form of field tests from planting to harvest conducted by its extension agents (more on these below) working in the basic farms, and issues certification cards. Only then can the seeds be packed and labelled, with an indication of their quality properties. There are different standard sizes of seed bags, depending on the variety and the quantities needed for sowing purposes. For instance, as sowing wheat requires 200 kg of seeds per hectare, bags of improved varieties of wheat come in the size of 25 kg or 50 kg. For maize (25 kg/ha of seeds required), bags size varies between 6.2 and 12.5 kg.

The seeds are sold through cooperatives and farmers associations. ESE resorts to 30-40 of them. Extension agents of the Ministry of Agriculture and Rural Development working in the basic farms perform an outreach function as they are in charge of promoting the seeds with farmers.

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<sup>19</sup> See Kebede Tafesse *Towards Seed Industry Development in Ethiopia*, paper presented at the International Workshop on Seed Security for Food Security, Florence, Italy, 30/11-1<sup>st</sup>/12/1997, available at <http://www.fao.org/ag/agp/agps/georgof/Georgo17.htm>, last visited 30 November 2005.

ESE has one protected variety and a keen interest in intellectual property rights, in particular to protect hybrids with a view to export markets. It produces 40,000 – 50,000 quintals of hybrid maize per year, no longer in co-operation with Pioneer Hi-Bred Seeds Ethiopia.

Indeed, in 1990, a joint-venture was signed between the then Ethiopian Seed Corporation and Pioneer Hi-Bred International, to procure, produce, process, condition, distribute and sell seeds and other agricultural products on domestic and export markets. Pioneer Hi-Bred Seeds Ethiopia now operates on its own. Pioneer produces in Zimbabwe and imports into Ethiopia. The company has registered 2-3 varieties in Ethiopia in order to multiply and sell them in this country.

Two initiatives are worth mentioning here, one launched by the Food and Agriculture Organisation and one by the Japanese Government.

The FAO project included three aspects: trying to get unused land in Oromia at woreda level; buying seeds from farmers to redistribute them during emergency crises and facilitating sales of seeds domestically; helping farmers to upgrade post-harvest methods (such as potatoes conditioning). The FAO was working with 4-5 cooperatives and trying to reach both locations and plant varieties not tapped by the ESE (cf. sorghum, haricot beans, potatoes), after conducting a survey on preferences of farmers in the different zones. At some point, farmers showed an interest in a hybrid maize (namely, Bako 1-30, produced by the EARO). Nevertheless, two difficulties arose in this respect: the access to the parental lines was protected by the EARO and the training of farmers in order to prevent cross-fertilisation proved cumbersome. The general outcome of the FAO project was slightly disappointing, as farmers often sold their harvest as grains for consumption, rather than as seeds and without waiting for prices to rise – this might be explained by their need to repay loans they had contracted on the side; also, after getting one harvest, some farmers pulled back from the cooperatives. Another impediment was the negative competition existing between cooperatives.

The Japanese Government project, running from 2003 until May 2004, was endowed with a grant of US\$ 759,500. It aimed at “improving spatial availability of primary agricultural inputs (seeds and fertilizers); (...) strengthening the agricultural cooperative movement; (...) improving the efficiency of the public agricultural extension system.” It intended to create a voucher system to permit farmers to purchase inputs from any retail outlet – whereas normally, agricultural credit is only available to farmers who purchase inputs from Government’s extension programme or from cooperatives. The design of grades and standards measures for agricultural produce was also part of this project, under the supervision of the Ministry of trade and Industry. Finally, the project was also taking into consideration the likely negative and positive environmental and social impacts of the project, with the participation of the Ethiopia Environmental Protection Agency and the Agricultural Inputs Authority, using a cost-benefit analysis (involving the “with project” and “without project” assessment criteria).<sup>20</sup>

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<sup>20</sup> See the World Bank website for details, at <http://wbln0018.worldbank.org/RMC/PHRD/proc%20planning.nsf>, last visited 20 January 2006.

### 3.3 – Focus on the coffee market

#### 3.3.1 – Ethiopian coffee in international trade

It is common knowledge that there are two types of coffee, namely arabica and robusta. Arabica coffee represents by far (70-75%) the largest share of the overall production of coffee. Ethiopia produces arabica coffee, whereas a new comer on this market, namely Vietnam, produces exclusively robusta, and Brazil, both types. Oromia and SNNP are the two main regions of coffee production in Ethiopia.

Coffee production involves over a million farming households (with land plots of 0.5 ha in average) and about 25% of the population of the country. Roughly 500,000 hectares of land are occupied by coffee, with elevations ranging from 550 to 2400m. Annual coffee production varies between 300,000-330,000 tonnes, which corresponds to an average yield of 600 kg/ha.

Ethiopian coffee production systems fall into four categories:

- Forest (8-10% of the production)
- Semi-forest (30-35%; forest and semi-forest systems are found in the West)
- Garden coffee (generally in monasteries, in the East and South; 50-55%)
- Plantation coffee (5-6%).

In the first three systems, no input from outside the system is introduced. Coffee can be processed in two ways: sun-dried or wet (washed or semi-washed). 70% of the coffee exported from Ethiopia is sun-dried. However, owing to the increasing demand for wet coffee, the latter's share is planned to grow to about 50% in the coming years according to the Ministry of Agriculture and Rural Development.<sup>21</sup> Accordingly, wet coffee has the preference of Europe and the USA (except for Limu and Harar coffees), whereas Japan and the Middle-East prefer sun-dried coffee.

There are about ten flavour-types in Ethiopia. Western Ethiopia produces three types of coffee: Jimma, Limu, Nekempt, which are sun-dried coffees. The South-West of Ethiopia is home to Bebeke and Tepi coffees. In Southern Ethiopia, the two types are Yergachefee and Sidamo coffees (wet coffees), whereas Harar coffee (dried) can be found in the Eastern part of Ethiopia. The Harar type is appreciated by all Ethiopian coffee importers, even those preferring wet coffees.

Although Ethiopia is the first African coffee producer, it accounts for only 3% (4% in 2004) of the global coffee market. Vietnam alone represented more than 10% of the global market between 2000 and 2004 and has rapidly become the first exporter of robusta coffee, and Brazil, more than 30%.<sup>22</sup>

Main importers of Ethiopian coffee (tonnes):

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<sup>21</sup> MARD, Agricultural Marketing Sector *Coffee – The Gift of Ethiopia to the World*, p. 15.

<sup>22</sup> Christopher L. Gilbert *The Long Run Impact of the Ending of Coffee Control*, paper presented during the Second World Coffee Conference, Salvador (Bahia), Brazil, 23-25 September 2005, p.13, Figure 7 *Production Shares, ICO Exporting Members*; see also *ICO Letter from the Executive Director- Coffee Market Report*, May 2005, p. 3.

Country	1998/99	2003-2004	2004/2005
Germany	29,170	35,784	56,566
Japan	25,793	36,710	32,079
Saudi Arabia	17,262	17,608	15,184
U.S.A.	4,698	6,888	10,255
Belgium	5,150	13,355	10,064
Italy	5,082	6,657	8,135
France	7,520	8,466	8,002
<b>Total</b>	<b>105,397</b>	<b>142,423</b>	<b>157,197</b>

Source: MARD, Coffee, Tea, Spices, Cotton Marketing Department statistics. Coffee year = October to September.

The next importer in 2004/2005 was Sweden, with 4,126 tonnes, and the volume of imports by other countries then fall down to around or less than 1,000 tonnes. The figures for Germany vary to a great extent year to year. By crossing exports figures in US\$ in the first chart and figures expressed in tonnes for 2003-2004 in the above chart, the export price for Ethiopian coffee for that year was of US\$ 1.57 per kg. This corresponds roughly to the International Coffee Organization indicator price<sup>23</sup> of 80.47 US cents per lb of non-Colombian mild arabica coffee for 2004.

It is interesting to compare this classification with the ranking by total consumption in importing countries: the US comes first, then Germany, Japan, Italy and France. Still another ranking appears as to per capita consumption: Finland comes first (with 12 kg/person/year in 2004), followed by Denmark (9.46 kg), Norway, Belgium (8.15 kg), Germany, Austria (7.64 kg), Italy and France (5 kg).<sup>24</sup> These comparisons show that a country like the US imports great quantities of coffee, although not primarily from Ethiopia, and countries with small populations may be important coffee consumers, albeit this does not show in import volumes.

### 3.3.2 – Research on Ethiopian coffee

The National Coffee Research Centre based in Jimma has initiated a local landrace development programme, which seeks to avoid alteration of the typical or inherent characteristics of coffee types of each geographical locality and to encourage the production of improved varieties within their natural habitats. An outbreak of Coffee Berry Disease in 1971 wiped out whole areas of coffee production. Thus, the NCRC has developed and released to growers 15 CBD-resistant varieties. More recently, the centre has initiated research projects to create low caffeine coffee genotypes.

Low-caffeine coffee seems to be the focus of several projects lately, as decaffeinated coffee accounts for 10% of the world coffee marketed, valued at US\$ 70 billion in 2002. One such project – although its ambition is much wider - is the Coffee Improvement Programme IV (CIP IV), involving the Ethiopian Ministry of Agriculture and Rural Development, the Ministry of Finance and Economic Development, the European Commission delegation in Addis Ababa and the French Centre de Coopération Internationale en Recherche Agronomique pour le Développement. The fourth phase of this project, initiated in December 2001 and

<sup>23</sup> Available at <http://www.ico.org/prices/p2.htm>, last visited 26 January 2006.

<sup>24</sup> ICO *Letter from the Executive Director- Coffee Market Report*, May 2005, p. 6-7.

terminating in June 2008, is funded by a developmental grant amounting to somewhere between US\$ 13.4 million according to the figure appearing in the WTO-OECD Trade-Related Technical Assistance and Capacity Building database<sup>25</sup>, or to € 23.3 million according to the CIP IV leaflet. The EU is financing 61% of the project expenditures, the Government of Ethiopia, 33% and farmers will meet 6% by paying the cost price for the seedlings. The CIP IV project has five goals:

- Extension: training existing and recruiting more extension agents, so as to give them more specialised coffee knowledge for an effective information dissemination to farmers;
- Nurseries: the project will support the 18 nurseries created during CIP III and 59 further nurseries in order to fulfil the demand for Coffee Berry Disease resistant seedlings;
- Research: this goal involves several aspects, in particular landrace development and collection and taxonomy of indigenous coffee types; it seems that the initial goal of collecting genetic material with a view to re-sowing it in endangered areas has been replaced with molecular marking;
- *In situ* conservation: CIP IV aims at conserving the last remaining reserves of unique genetic material; although the Institute of Biodiversity Conservation and Research (to be described below) was initially associated, the implementation of the project in the demarcated areas will be carried out by the regional forestry departments, over 13,000 ha in SNNP and 10,000 ha in Oromia. *Ex situ* conservation is already being conducted by ICBR and the Ethiopian Agricultural Research Organisation (EARO, to be described below) at Jimma and other sub-stations.
- Marketing: marketing studies shall be conducted for USA, Europe and Japan markets for promotion of Ethiopian coffees.

Another project, the CoCE Project, is funded by the German for Education and Research and also involves the EARO. It aims at assessing the diversity and the economic value of the coffee gene pool of the Ethiopian montane rainforest<sup>26</sup>, and to promote *in situ* conservation and sustainable use thereof.

The leaflet of the MARD<sup>27</sup>, as well as many persons interviewed in Addis Ababa, mentioned the row between Brazil and Ethiopia over the discovery in July 2004 of 3 coffee plants with naturally low levels of caffeine by a Brazilian researcher after the screening of 3,000 Ethiopian coffee samples conserved in Costa Rican collections<sup>28</sup>.

<sup>25</sup> Available at [http://tcbdb.wto.org/trta\\_project.asp?prjcd=8ACP%20ET012&ctry=167](http://tcbdb.wto.org/trta_project.asp?prjcd=8ACP%20ET012&ctry=167), last visited 26 January 2006. For an introduction to this project and to other coffee and cocoa projects in Africa, the website of the Sustainable Tree Crops Program is quite valuable: [http://www.treecrops.org/country/ethiopia\\_conservation.asp](http://www.treecrops.org/country/ethiopia_conservation.asp), last visited 1<sup>st</sup> December 2005.

<sup>26</sup> The montane forest is an endangered area: out of 2.3 million ha of remaining forest, 1.6 million ha are highly disturbed by human activities; it seems that, whereas a century ago, it covered 40% of Ethiopia's highlands, it now represents only 3% of this area and is disappearing at a pace of up to 200,000 ha p.a. according to Gebre and Deribe 2001, quoted by C. Richerzhagen and D. Virchow in *Sustainable Utilization of Crop Genetic Diversity through Property Rights Mechanisms? The Case of Coffee Genetic Resources in Ethiopia*, Bio-Econ Workshop, Bonn (Germany), May 2002, p. 10.

<sup>27</sup> MARD, Agricultural Marketing Sector *Coffee – The Gift of Ethiopia to the World*, p. 4.

<sup>28</sup> See the report on Reuters news wire, dated 13 July 2004, available at

<http://www.grain.org/bio-ipr/?id=404>,

and <http://www.scidev.net/News/index.cfm?fuseaction=readnews&itemid=1453&language=1>

for a focus on intellectual property rights issues in this context, both last visited 26 January 2006.

The beans were reportedly collected during a United Nations scientific mission in 1964-1965 in an area that was being deforested, and they were sent to different collections in Ethiopia, Costa Rica, India, Portugal, and Tanzania. This constitutes a topical example of the inherent problems of implementation of the Convention on Biological Diversity provisions dealing with access and benefit-sharing with local communities in the country of origin of the genetic material at stake, when *ex situ* collections were constituted before the entry into force of this Convention, in December 1993.

### 3.3.3 – Coffee processing

As already mentioned, there are two methods of processing coffee beans. In the case of dry coffee, farmers handpick the berries, dry them and bring them to the nearest market, to sell them to cooperatives, traders, or wholesalers. Free market rules apply at this stage.

In the case of wet coffee, farmers sell the wet berries to processing plants operated by cooperatives, individuals or companies, who will dry them. A grading check (as to the purity of the coffee) is conducted at the washing station by regional inspectors in the woreda (who report to the Oromia Government), before the produce leaves for an auction centre. The coffee auction system dates back 1972<sup>29</sup>. Any coffee with more than 11.5% moisture content and 8% impurities by volume is not transported to the auction centre. Trucks transporting processed coffee are plumbed, after receiving a license from the Government (the regional one in the case of domestic sales, and the Federal Government for exports). There are two terminal (auction) markets: one in Addis Ababa, and one in Dire Dawa (in the East). A second, central grading is carried out at auction centres by the Coffee Liquoring Unit of the Input and Marketing Authority of the Ministry of Agriculture and Rural Development. It consists in a visual analysis and cup-tasting. About 50% of the total produce is consumed domestically. According to ICO's recent data, this consumption has dropped to 36.6% in 2004 (with the Philippines, Venezuela, the Democratic Republic of Congo and the Dominican Republic having much higher rates of domestic consumption, above 70% of the production). In average, it is estimated that producing countries consume 25% of their production.<sup>30</sup>

### 3.3.4 – Coffee market circuits

#### *Institutional framework*

The coffee market is monitored by two complementary departments within the MARD. The Coffee, Tea and Spices Development Authority, within the Agricultural Development Authority of the MARD, is in charge of developing new varieties, and of helping the dissemination of international and domestic technologies. The CIP IV

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<sup>29</sup> In the context of prices liberalisation, between 1992 and 1999 the Price Differential Committee was setting floor prices and establishing formulae for deriving local prices from the international price, in order to maintain some stability. The auction system tends to divert the best quality coffee to the export market, according to Robert Stell Love *Political Economy of the Coffee Filiere in Ethiopia*, PhD Thesis University of Leeds, England, 2002.

<sup>30</sup> ICO *Letter from the Executive Director- Coffee Market Report*, May 2005, p. 6.





focusing on environmental sustainability in coffee production). A participation in the Rain-forest Alliance Certification is also in the pipeline. Moreover, the Oromia Coffee Union is fair trade certified. Oxfam America and more recently Oxfam international has entered a partnership with the Oromia Coffee Union aiming at stabilising coffee prices during the ongoing coffee crisis. Fair trade sales generate an additional benefit of US\$ 0.5 per pound of coffee, used for social infrastructure (water sanitation, roads, schools, hospitals): seven schools and two clinics have been created in 2003-2004 as a result of this scheme. The Oromia Coffee Union works in collaboration with the Ministry of Management of Water, the Ministry of Health and the Ministry of Education of Oromia.<sup>32</sup>

### *Exporters*

The export trade of raw coffee, like that of chat, oil seeds and pulses, is exclusively reserved for domestic investors, pursuant to Art. 1 of the Federal Regulations no 84/2003 on “Investment incentives and investment areas reserved for domestic investors”.<sup>33</sup> Exporters are supervised by the Federal Ministry of Trade and Industry.

Prior to the liberalisation of the coffee market in 1991, the Ethiopian Coffee Marketing Corp., a state company, exported 95% of all coffee. In eight years, private companies have grown to export 90%. As of 1999, there were 100 exporters, compared to 17 during the Derg period. Ethio-Coffee and Tea Plantation and Marketing Plc is the new name of the government-owned company, after it was sold over to Midroc Ethiopia holdings by the Ethiopian Privatization Agency<sup>34</sup>. The Midroc group, owned by Sheik Mohammed Al Amoudi, a Saudi-Ethiopian citizen, is a large conglomerate involved in construction, tourism (it operates the Sheraton Hotel in Addis Ababa), and agribusiness (it owns in particular a vegetable farm and a rose farm, whose produce is exported to Europe). Ethio-Coffee started in 1998 the Gemadro Coffee Plantation Project on a 2,300 ha area in the Kaffa (Southern) area, an investment reaching ETBirr 30 million (approximately US\$ 3.5 million). It has been reported to have “a negative impact on habitats of wild coffee populations (Kumilachew, 2001; Tadesse and Demel, 2001)”.<sup>35</sup>

## 4 – Institutional framework

Two pioneer Ethiopian institutions in the agricultural field were the Ambo and Jimma Junior Colleges of Agriculture in 1947, and the Imperial College of Agriculture and Mechanical Arts in 1953, later renamed Alemaya University of Agriculture. The AUA had an important station in Debre Zeit conducting research on crops, forestry and livestock, which has passed under the control of the Ethiopian Agricultural Research Organization. Addis Ababa University (AAU) hosts the national herbarium.

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<sup>32</sup> All these developments are a transcript of a personal communication with Mr. Tadesse Meskela, General Manager of the Oromia Coffee Union, 16 December 2005.

<sup>33</sup> Published in the *Federal Negarit Gazeta* no 34 dated 7 February 2003.

<sup>34</sup> Previous negotiations with a British firm called Commonwealth Development Corporation failed “because of unacceptable preconditions set by the company to the government”, as reported in an online *Fortune* article dated 4 March 2001, titled *Al Amoudi to Venture into Vegetable, Flower Farming*, by Mikias Worku, last visited 22 December 2005.

<sup>35</sup> Quoted by C. Richerzhagen and D. Virchow (2002) – see footnote no 26, p. 11.

The Ethiopian Science and Technology Commission, created by Proclamation 62/1975, and re-established by Proclamations 91/94 and 7/95, is accountable to the Ministry of Capacity Building. The National Agricultural Research Council, established under the auspices of the ESTC, was mandated to promote and support agricultural research at the federal and regional levels. Its responsibilities have been taken over by the Ethiopian Agricultural Research Organization since 1997, created by Proclamation 79/1997 and accountable to the Prime Minister's Office. The EARO is responsible for coordinating, encouraging and assisting agricultural research activities and for generating, improving and adapting technologies.

In 1976, the Plant Genetic Resources Centre of Ethiopia (PGRC/E) was created and renamed as Biological Diversity Institute (BDI) in 1994, in response to the threat of genetic erosion. It aimed at conserving genetic resources, providing germplasm for the improvement of crops, acquiring new germplasm from other countries and documenting biodiversity-related indigenous knowledge. In 1998, the BDI was transformed into the Institute of Biodiversity Conservation and Research by Proclamation 120/1998. Pursuant to Art. 6.6 of this proclamation, the IBCR is in charge of the repatriation of germplasm of Ethiopian origin from elsewhere in the world. Art. 6.14 mentions that it is the IBCR's duty to study traditional knowledge on conservation, utilization and improvement of biological resources and to integrate such knowledge with scientific approaches. Art. 6.20 provides that the IBCR gives permits for the collection, import or export of biological specimens or samples.<sup>36</sup> The IBCR follows two strategies of conservation, *in situ* conservation, which is community-based in different agro-ecological regions, and *ex situ* conservation, i.e. long-term storage in the IBCR genebanks (including up to 75,000 accessions, some of which are kept in cold rooms *in situ*). The genebanks accessions are maintained with a view to reintroducing or exporting these genetic resources. An average 2,000 accessions are distributed annually. The IBCR maintains about 30 field crops species in its genebanks, consisting of cereals, pulses, oil seeds and non-edible industrial plants. In addition, 25 medicinal plant species are kept in two genebanks and one seed bank. Research activities in order to create improved varieties are now conducted by the EARO and no longer by the IBCR. However, the IBCR carries out studies on characters such as resistance to drought or salinity, or to specific diseases, and on the nutritional value of crop species. Since November 2005, IBCR has become the focal point of access to genetic resources under the Convention on Biological Diversity, thus replacing the Environment Protection Agency.

The National Crop Improvement Conference in 1980 decided the creation of the Ethiopian Seed Enterprise and of the National Variety Release Committee. The NVRC works in collaboration with the National Seed Industry Agency, renamed National Authority for Input in Agriculture, which belongs to the Ministry of Agriculture and Rural Development. Before a variety can be released in Ethiopia, it has to be registered with the NVRC, and then certified by the NAIA, as will be explained below.

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<sup>36</sup> The description of this Proclamation draws on Girma Hailu *Ethiopia: Biodiversity Conservation and Seed Banking to Alleviate Poverty*, UNDP Ethiopia, year unspecified.

The NAIA, created by the Proclamation 288/2002, has succeeded the National Seed industry Agency (NSIA), established in July 1993 to monitor the seed industry and ensure that farmers, seed producers and seed exporters benefit from this industry.

The Ethiopian Intellectual Property Office (EIPO) is supervised by the ESTC (although it has moved in 2005 into the Federal Ethics and Anti-Corruption Commission building). Ethiopia has an observer status within the African Regional Intellectual Property Office (ARIPO)<sup>37</sup>.

## 5 – Implementation of the CBD, the CPB and the TRIPs Agreement

### *Implementation of the Convention on Biological Diversity*

An Environmental Policy of Ethiopia was defined in 2005. One of the sectoral environmental policy contemplated deals with sustainable agriculture. It provides that in crop breeding the emphasis should shift from single line plant varieties and animal breeds to multiple lines involving as many different but adapted lines as possible in order to increase adapting capacities and resistance to diseases and pests in plants. Likewise, sterile male techniques are mentioned as of interest. The precautionary principle is reminded, not only with respect to environmental issues, but also as to the economic and social impact of agricultural/environmental policies.

Several cross-sectoral policies are also described. One such policy, titled “Tenure and Access rights to Land and Natural Resources”, holds there is a need to “recognize and protect wherever possible the customary rights of access to and use of land and natural resource which are constitutionally acceptable, socially equitable and are preferred by local communities.” An “Environmental Information System” is also envisioned, aiming at the creation of a legal protection of community intellectual property rights. Environmental information should constitute a legal right, except where it may compromise national security, community intellectual property rights or individual property rights.” This calls for a comment. Although access to information held by local communities should be granted or refused by such local communities, national or environmental security should prevail over the exercise of intellectual property rights, be they communal or individual.

A Draft Biosecurity Proclamation was also designed in 2005, as an implementation of the Cartagena Protocol to the Convention on Biological Diversity, joined by Ethiopia **in 2003**. The objective of this Proclamation is “to protect human and animal health, biological diversity and the environment at large by preventing or managing down to levels of insignificance the adverse effects of genetically modified organisms and products thereof.”<sup>38</sup> The Proclamation applies to any transaction whether intended for release into the environment, for use as a pharmaceutical for humans or animals, or for food, feed or processing, except where provided otherwise. This scope seems broader than that of the CPB, which exempts pharmaceuticals and GMOs intended for food, feed or processing or for contained use from the Advance Informed Agreement

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<sup>37</sup> The Lusaka Agreement adopted on December 9, 1976, created the English-Speaking Africa Regional Intellectual Property Office. In December 1985, the Lusaka Agreement was amended to open the membership to all African States members of the then Organization of African Unity, and the name of ESARIPO was changed into ARIPO.

<sup>38</sup> Draft Proclamation, Art. 4.

procedure set forth by the CPB. The Proclamation provision on scope draws on Art. 2 of the African Model Law on Safety in Biotechnology, adopted by the African Union in 2001, which does not include any proviso<sup>39</sup>. The precautionary principle is enunciated as follows: “[w]hen faced with any uncertainty in any risk, [any government] shall assume that that risk can occur and shall act to prevent or contain it.”<sup>40</sup> It seems to apply to the federal government as to local governments. The implementing agency is the Environment Protection Agency, established by Proclamation 9/1995. “Any authorization given may be revoked or subjected to conditions in addition to those originally imposed if, in the opinion of the Authority, new information obtained or a review of existing information about the genetically modified organism or product thereof indicates any unacceptable risk.”<sup>41</sup> Authorised persons may not transfer any genetically modified organism or product thereof to any person against the terms and conditions of the authorisation, and shall immediately inform the Authority whenever any modified organism or product thereof ceases to be under his/her custody without his/her knowledge<sup>42</sup>. This last mention seems slightly odd, and might intend to cover instances of unintentional transfer or release of GMOs. The provisions on risk management, including labelling requirements, are quite detailed, as are those on the establishment of a National Biosafety Clearing-House, enforcement and liability and redress. In particular, “[a]pproval for any transaction by the Authority does not exonerate the applicant from liability”, and “[l]iability shall also extend to harm or damage caused directly or indirectly by the genetically modified organism or its product to:

- a) the livelihood or indigenous knowledge systems of local communities,
- b) technologies of a community or communities,
- (...)
- h) damage to the economy of an area or community, and
- i) any other consequential economic, social or cultural damages.”<sup>43</sup>

Any person, group of persons, or any private or state organisation is entitled to bring a claim and seek redress in respect of the breach or threatened breach of any provision of this law, including any provision relating to damage to human health, biological

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<sup>39</sup> The African Model Law on Safety in Biotechnology includes interesting provisions on intellectual property rights and confidential information:

Art. 8 (6) states that in case of refusal of an application to import, transport in transit, make contained use of, release, or place on the market a GMO or product thereof, “any patent or application for a patent on the genetically modified organism or product of a genetically modified organism shall be revoked or rejected, as the case may be.”

Art. 12 on confidential business information provides that “[i]n no case may the following information supplied by the applicant [for an authorisation to import...] be kept confidential:

- a) description of the genetically modified organism or the products of a genetically modified organism (...);
- b) methods and plans for monitoring the genetically modified organisms or the product of a genetically modified organism (...);
- c) the evaluation of possible effects, in particular any pathogenic and/or ecologically disruptive effects.”

Thus, without prejudice to potential patent applications, information necessary to a risk assessment shall be made available to the competent authority.

<sup>40</sup> Art. 5.

<sup>41</sup> Art. 17 (1).

<sup>42</sup> Art. 19

<sup>43</sup> Art. 29 (1) and (8).

diversity, the environment, or to socio-economic or cultural conditions of local communities or to the economy of the country, in the interest of that person or group of persons, in the public interest or in the interest of biological diversity conservation.<sup>44</sup>

Traditional quarantine issues are dealt with by the Plant Quarantine Regulations, defined by the Plant Protection Department of the Ministry of Agriculture and Rural Development. An importer must first obtain an authorisation from the NAIA, as will be explained below, and then from the Plant Protection Department, before an import permit is issued. Also, national seed standards are issued by the Quality and Standards Authority of Ethiopia, placed under supervision of the Ministry of Trade and Industry.

### *Seed Regulations*

The current variety release guidelines have been in use for over two decades<sup>45</sup>. A review is under consideration. The functions of the National Variety Release Committee are:

- To approve the release of hybrids and varieties developed by governmental and private institutions, at least once per year for both the highland and the lowland crops;
- To make the necessary arrangements with foreign and local institutions (EARO, AAU...) to conduct quality tests such as oil content, cooking, baking or fibre quality of varieties and hybrids proposed for release;
- To register the released varieties and hybrids;
- To obtain seed of the newly released variety or hybrid from the breeder or the institution that developed it and provide it to the IBCR for long-term storage and maintenance;
- To recall and remove obsolete varieties and hybrids from the list of those eligible for seed certification when sufficient information is available;
- To give periodic review and status report to the National Seed industry Agency (now renamed NAIA).

The criteria for the release of a variety are the following ones:

- Distinctness, in one or more economic characteristics important for the crop (yield, hardiness, resistance/tolerance to diseases, pests, soil problems; for coffee, aroma, flavour, storability, maturity periods...),
- Uniformity,
- Stability,
- Availability of a reasonable quantity of breeders' seed of a variety, or seed of a hybrid's parents for the NAIA to be able to generate enough basic seeds.

The first requirement is a blend of traditional UPOV-like distinctness criterion and of "Value in Cultivation and Use" (VCU)<sup>46</sup> criterion.

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<sup>44</sup> Art. 29 (10).

<sup>45</sup> The following developments are taken from the NSIA booklet titled *National Variety Release Procedures and Mechanism*, November 2001.

<sup>46</sup> The value in cultivation and use (VCU) used to be a criterion for PBR protection in Germany. The rationale for reinstating this criterion is that a variety may offer significant advantages in some parts of a country and not in others, or that it may have lower yields than other varieties but prove resistant to

The breeder must provide a complete morphological description of the candidate cultivar, together with data to support the quantitative and qualitative characters of the plant. The new variety should be planted along with the established local or improved variety in relatively large plots (at least 100m<sup>2</sup> at 2 or 3 sites). In one season, no more than three varieties per crop may be proposed for release under the same agro-ecological zone. Any new variety shall be assigned a designation (and only one) by the breeder at the time of approval; the NVRC may reject the proposed name.

The Seed Proclamation no 206/2000 deals with seed certification. The rationale for its adoption is “the need for creating a legal framework for the protection and control of the interests of users, originators, processors, wholesalers, and retailers of plant seeds.”<sup>47</sup>

A variety is defined as a “sub-division of any kind of plant species that can be clearly differentiated from other varieties of that kind by heritable characters; and that remain stable when reproduced sexually or asexually.” “Seed” means “true seed, bulbs, tubers, cuttings, nursery plants of field and garden crops or any other plant material used for the propagation of plants.”<sup>48</sup>

Art. 3 of the Proclamation states that the provisions of this proclamation shall not apply to seeds produced by a farmer, and sold directly to another farmer, neither to seeds intended for other purposes than planting.

After a new variety has been approved for release and registered by the NVRC (Art. 4), a competence assurance certificate is required in order to engage in seed production, processing, import, export or wholesale and retail sale. The candidate shall show that he/she has:

- qualified professional personnel, necessary land, farm equipment, and is able to carry out internal quality control, where he/she is a seed producer;
- qualified professional personnel, the necessary equipment for cleaning, grading, treating, bagging and labelling seeds, where he/she is a seed processor;
- personnel who has basic knowledge of seeds and appropriate storage, where he/she is a seed importer, exporter, wholesaler or retailer.<sup>49</sup>

For the purpose of competence certificate issuance, the NAIA may inspect the applicants’ premises. The NAIA may also take seed samples from wholesale or retail shops to test them in laboratories. The certificate of competence assurance is valid for a three-year period. The certificate may be withdrawn or suspended where:

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specific pathogens. Leskien and Flitner (1997) argue that the VCU of protected varieties would have to be reassessed periodically. This is particularly true as pathogens themselves evolve, spurring new adaptations in plants or conversely, rendering the VCU of a given variety higher to what it used to be, or lower – see D. Leskien and M. Flitner *Intellectual Property Rights and Plant Genetic Resources – Options for a Sui Generis System in Issues in Genetic Resources* no 6, IPGRI, 1997.

<sup>47</sup> Proclamation no 206/2000, Third Recital.

<sup>48</sup> Ibid., Art. 2.

<sup>49</sup> Ibid., Art. 6.

- The certificate has been transferred to another person without prior authorisation by the NAIA;
- Where the holder of the certificate has been found selling sub-standard seeds;
- Where the license for seed business has been cancelled.

After cancelling a competence assurance certificate, the NAIA shall notify the licensing authority to cancel the corresponding seed business license. Similarly, the licensing body shall ascertain that the applicant has obtained a competence assurance certificate from the NAIA before issuing a license in seed production processing, wholesaling or retailing.

The NAIA requires any seed seller to affix on seed containers labels including:

- The name of the producer and its emblem,
- The mentions “Certified Seed Local” or “Certified Seed Imported” as appropriate,
- Year of production and test date,
- The type of crop and name of the variety,
- Mentions regarding the seed quality.

The Seed Proclamation provides further that research organisations, both public and private, shall import or export varieties for research purposes only after obtaining a permit from the NAIA and where these satisfy the requirements of the Plant Quarantine Regulations.

Seeds that are genetically modified shall be imported only if the NAIA is satisfied “that these seeds or planting materials are in conformity with the laws issued regarding the importation of genetically modified plants and other pertinent directives.” Moreover, “[n]o person shall import and sell seed whose second generation seed cannot germinate or seed which has terminator gene technology.”<sup>50</sup>

Any person aggrieved by a decision made by the NAIA may appeal to the appropriate jurisdiction within 30 days upon notification of the decision. Any person who intentionally offers for sale or sells below standard or unregistered seed shall be punished with imprisonment for a duration comprised between 10 and 15 years and a fine ranging from ETBirr 50,000 and 100,000 (US\$ 5,814 and 11,628). The intentional sale of seeds in bags that do not comply with standards is punishable with imprisonment for a duration comprised between 3 and 5 years and a fine comprised between ETBirr 15,000 and 25,000. When the weight of the seeds is less than indicated on the bags, the penalties are of 2 to 5 years of imprisonment and a fine ranging between ETBirr 10,000 and 20,000.

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<sup>50</sup> Proclamation 206/2000, Art. 25 (5) and (6). Art. 18 of the Indian Protection of Plant Varieties and Farmers’ Rights Act 53 of 30 October 2001 likewise prohibits the granting of plant breeders’ rights on varieties containing gene sequences involving “terminator technology”.



### *Intellectual Property Rights and Benefit-Sharing*

Proclamation no 123/1995 concerning inventions, minor inventions and industrial designs excludes from patentability “[p]lant or animal varieties or essentially biological processes for the production of plants or animals.”<sup>51</sup>

The Proclamation on Plant Breeders’ Rights was adopted on 3 January 2006. Members of the Rural Development and the Natural Resources and Environmental Protection Standing Committees of the House of Peoples’ Representatives considered that the proclamation would encourage farmers and pastoralists to use their genetic resources, while encouraging the private sector to release new plant varieties suitable for the varied ecosystems of Ethiopia and facilitating the use of new plant varieties released abroad. On the same day, the Proclamation to provide for access to genetic resources and community knowledge and community rights was also endorsed.<sup>52</sup> This proclamation draws on the African Unity Model Law on Rights of Communities, Farmers, Breeders, and Access to Biological Resources, adopted in 2000.

The Proclamation on Access to Genetic Resources and Community Knowledge includes in particular the same definition of “derivatives” as contained in the African Unity Model Law, i.e. “products extracted or developed from biological resource and including products such as plant varieties, oils, resins, gums and proteins.” The Proclamation declares that the “ownership of genetic resources shall be vested in the state and the people” and that the “ownership of community knowledge shall be vested in the concerned local community.”<sup>53</sup>

Local communities have the right to regulate access to their community knowledge and an inalienable right to use their genetic resources and community knowledge. They may refuse access when they believe that such access would be detrimental to their cultural or natural heritage. They may also, for the same reason, withdraw the prior informed consent they had previously given. They have the responsibility to prohibit any person who does not belong to their community from collecting genetic resources from their localities without having a permit.

The proclamation shall not apply to customary exchange and use of genetic resources by and among Ethiopian local communities, neither to the sale of the produce of biological resources for food or feed.

Community knowledge need not registered to be protected by community rights<sup>54</sup>. The presence of a given genetic resource in a gene bank or a conservation centre in Ethiopia shall not affect its protection by community rights, nor does the oral or written description of such genetic resource or community knowledge (there is no “anticipation” as in the patent system).

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<sup>51</sup> Art. 4. The whole wording (except a strange mention of non-copyrighted works) of this article reminds of the European Patent Convention Art. 53.

<sup>52</sup> See the Ethiopian News Agency website at <http://www.ena.gov.et/print.asp?NewsId=191992>, last visited 13 January 2006.

<sup>53</sup> Art. 5.

<sup>54</sup> This was probably inspired by Art. 23 (3) of the AU Model Law.

Art. 9 states that “[l]ocal communities shall have the right to obtain 50% of the benefit shared by the state in the form of money from the benefits derived from the utilization of their genetic resources”.<sup>55</sup> Utilization shall be documented by genetic resources passport data.

The IBCR grants permits to access genetic resources. “Unless explicitly expressed, the granting of a permit to access genetic resources shall not be construed to constitute permit to access the community knowledge associated therewith and vice-versa.”<sup>56</sup> The IBCR is also in charge of issuing export permits.

Access by foreigners is conditioned by the participation of Ethiopian nationals designated by the IBCR in the research activities, and during the collection of genetic resources and traditional knowledge, authorised foreigners shall be accompanied by the personnel of the Institute. In all cases, pursuant to Art. 16, the access agreement must show the following information:

- identity of the parties,
- type and quantitative description of the genetic resource concerned,
- description of the community knowledge accessed or associated to the genetic resources accessed,
- locality,
- name of the institution with which a sample of the genetic resource and the description of the community knowledge shall be deposited,
- name of the institution designated by the IBCR to be in charge of monitoring the access agreement,
- the benefit the state shall get from the access to genetic resources,
- where the agreement includes access to community knowledge, the benefit local communities shall get therefrom,
- the duration of the access agreement,
- dispute settlement mechanisms.

The wording of Art. 16 seems to be more restrictive than that of Art. 9, as the former may be interpreted as limiting benefit sharing to the use of community knowledge. Art. 18 indicates that the “kind and the amount of the benefit to be shared by the state and local communities from access to genetic resources or community knowledge shall be determined case by case in each specific access agreements to be signed”, and the “remaining portion of the monetary benefit from access to genetic resources, after deducting the share of the local community as determined pursuant to Article 9 (1) of this Proclamation, shall be allocated for conservation of biodiversity and the promotion of community knowledge (...)”

The scheme seems to describe a situation where the proportion (x) of the benefits derived from the use of Ethiopian genetic resources or community knowledge is determined on a case by case basis, in the access agreement. The share local communities shall get for the use of their traditional knowledge must also be specified in the access agreement, whereas local communities shall receive automatically a share of 50% of the share (x) received by the state for the use of genetic resources.

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<sup>55</sup> This might have been taken from Art. 22 of the AU Model Law.

<sup>56</sup> Art. 11.

The wording is not totally clear concerning the treatment of access to community knowledge.

Benefits shall also be non-monetary<sup>57</sup>, such as employment opportunities, exclusive or preferential supply agreements over genetic resources, access to products and technologies developed, training at both the institutional and local communities levels, provision of equipment and infrastructure...

The obligations of the access permit holder include:

- depositing a copy of the access permit with the relevant regional institution in the district where the genetic resource is to be collected,
- not to deplete population of farmers planting stock or wild species,
- where the genetic resource is to be collected repeatedly, to follow up the environmental and socio-economic impact of the access and to submit a report thereon,
- to inform the IBCR in writing of all the findings of the research,
- not to transfer the genetic resource and the community knowledge accessed to any other third party without obtaining prior written authorisation from the IBCR,
- to return any unused genetic material at the end of the planned research or upon termination of the access agreement,
- to enter new negotiations with the IBCR where the permit holder intends to apply for a patent or any other intellectual property protection over the community knowledge accessed,
- not to apply for a patent or any other IP protection without first obtaining written consent from the IBCR.

These last two indents might prove difficult to implement, unless the IBCR or other institutions in charge of monitoring the access agreement regularly check foreign patent offices online databases, and patent offices require the disclosure of origin of the genetic resources or traditional knowledge involved in the invention to be protected.

It is the responsibility of customs officers to inspect that any genetic resources being taken out of the country are accompanied with an export permit given by the ICBR, and to seize them otherwise.

The Proclamation has a retroactive effect on access agreements concluded prior to the coming into force of this Proclamation.

Any person who does not comply with the provisions of the Proclamation on Access to Genetic Resources and Community Knowledge and Community Rights shall be punished with at least 5 years of imprisonment or a fine ranging from 10,000 to 20,000 ETBirr (US\$ 1,163 and 2,325) or both.

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<sup>57</sup> This follows the recommendations of the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization (prepared by IUCN and endorsed by the Sixth Conference of the Parties – COP – to the CBD held in April 2002), of the CBD COP 7 Decision VII/19, and of the report of the International Expert Workshop on Access to Genetic Resources and Benefit Sharing, Cuernavaca, Mexico, 24-27 October 2004 (p. 321, 325).

Based on this proclamation, two Model Agreements have been designed, respectively on Access to and Benefit Sharing from Biological Resource Materials and/or Associated Communities Knowledge, and on Traditional Medicinal Knowledge Transfer Agreement.

The Model Agreement on Access and Benefit Sharing lists the obligations of providers and recipients of biological resources, among which the obligation made to the recipient not to claim separately intellectual property rights over biological resources or communities knowledge, and the obligation to keep the provider fully informed of any improvements and new developments arising from the use of the accessed biological material or communities knowledge. The provider may reserve the right to review any manuscript resulting from the research on the biological resources or communities knowledge accessed and to require that any part be kept as confidential matter. The Model Agreement includes a provision on confidential information, that contained in the access agreement and any information identified as such by the parties.

Benefits are described as up-front payments, access fees per sample collected, royalties on the turnover resulting from commercialisation of the products derived from accessed biological resources or communities knowledge, an amount to be paid to the Financial Support Account to contribute to conservation and sustainable use of biological resources in Ethiopia, and research funding negotiated on a project by project basis. Non-monetary benefits may consist of a participation in product development, including the establishment and running of joint-ventures. The recipient shall regularly submit to the provider research and financial reports. The provider reserves the right to designate an independent consultant to monitor the recipient's financial records or other administrative aspects of the access agreement.

The Model Traditional Medicinal Knowledge Transfer Agreement defines “traditional medicinal knowledge” as “the method, techniques, procedure and the like used to diagnose or treat human or animal ailment.”<sup>58</sup> It shall “not affect the traditional exchange of medicinal knowledge, associated biological resources between the traditional medicinal practitioners and communities in the customary or traditional context.”<sup>59</sup> The traditional medicinal knowledge provider maintains ownership and all rights to the knowledge and related information covered by the transfer agreement. He/she shall have a right of access to the results of any research involving the use of the traditional medicinal knowledge or associated biological resources or material. The provider shall provide information and assistance to the recipient in furtherance of the research and development carried out on the traditional medicinal knowledge or related biological material at stake, and he/she shall guaranty the recipient of the exclusive supply of these traditional knowledge and related biological material.

As a counterpart, the recipient shall keep the provider fully informed of any improvement arising from the use of the imparted traditional medicinal knowledge and associated biological material. The recipient shall also, in consultation with the provider, publicise the results of the R&D, where appropriate after securing a patent or any other intellectual property right in the name of both parties on the result arising

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<sup>58</sup> Art. 1.

<sup>59</sup> Art. 2.

from the use of the traditional knowledge or associated biological material and the derivatives thereof. Both parties shall register and deposit the Transfer Agreement at the Ethiopian Intellectual Property Office.

Neither party to a traditional medicinal knowledge transfer agreement may, in whole or in part, assign, transfer, pledge or otherwise dispose of any right or obligation set out therein. The Model Transfer Agreement describes at length confidentiality obligations of both parties. This Model Agreement generally takes a stance in favour of intellectual property rights. However, there is no mention of any benefit-sharing scheme where no joint-patent has been applied for, and no requirement to discuss the possibility of granting licences on such joint-patents.

Two access agreements have been concluded on vernonia and teff with companies respectively from the United Kingdom and The Netherlands<sup>60</sup>. Vernonia (*Vernonia galamensis*) is an annual, herbaceous plant native to Eastern Africa and containing about 40% oil, used to produce epoxies for manufacturing adhesives, varnishes and paints resisting very low temperatures (for aircrafts), and industrial coatings. Several patents have been obtained or applied for to the US Patent and Trademark Office involving different varieties of vernonia: application no 20040061142 for a treatment of skin conditions (such as vitiligo and skin cancer), patent no 6,849,604 on a phytochemotherapy for cancer (including human breast cancer) dated 1st February 2005, patent no 6,531,461 on a medicament for the treatment of diabetes, granted on 11 March 2003, or patent no 5,227,453 dated 13 July 1993 on vernonia oil modification of epoxy resins. The economic value of vernonia has thus already been established. According to available information, the two access agreements seem to be mainly dealing with royalties. This leads to a final interrogation on the levels and types of benefits to be expected from Ethiopian coffee trade.

Concluding remarks:

Ethiopian germplasm constitutes the genetic base of most of *Coffea arabica* produced in Latin America and Asia, exposing coffee production to the threat of disease outbreaks, such as the Coffee Berry Disease that wiped out an important proportion of Ethiopian coffee areas in 1971 or the coffee leaf rust outbreak which resulted in the termination of coffee production in Sri Lanka.<sup>61</sup> Maintaining this germplasm is thus paramount.

The strategy followed by the Oromia Coffee Union<sup>62</sup> seems to be the best way to promote and upgrade Ethiopian coffee, through certification and fair trade. In respect of certification, the WTO Agreement on rules of origin may have an impact.

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<sup>60</sup> See Sebsebe Demissew and Tewelde B.G. Egziabher *Expectations of Biodiversity rich countries from commercial and non-commercial users like botanic gardens: the Ethiopian case*, in Document UNEP/CBD/WG-ABS/4/INF/10, p. 67.

<sup>61</sup> Tadesse et al., 2001, Demel, 1999, Wrigley, 1988, quoted by C. Richerzhagen C. Richerzhagen and D. Virchow in *Sustainable Utilization of Crop Genetic Diversity through Property Rights Mechanisms? The Case of Coffee Genetic Resources in Ethiopia*, Bio-Econ Workshop, Bonn (Germany), May 2002, p. 20.

<sup>62</sup> And probably others; owing to time limitations, I have only visited this one out of 4 coffee cooperatives.

The views of coffee brewers on this issue differ from those of coffee producers. Coffee roasters oppose a possible labelling requirement including the indication of coffee origin, as most of the time, coffee packs are the result of a blending of different coffee types, varying from year to year in order to maintain a given taste despite climate variations, even in the case of pure origins (cf. “pure Ethiopian coffee” or “pure Colombian coffee”). Two difficulties would then arise from their perspective: it would become easier for competitors to copy a popular blend if the different coffee origins and proportions thereof are clearly indicated on labels, and packaging and labelling would have to change yearly (owing to the necessity to change the respective proportions of different coffee types following the conditions of production), which would generate additional costs. In the case of “Carte Noire” coffee, which represents roughly 25% of all coffee packs sold in France, 20 different origins are present.

Coffee brewers are mainly Western private companies, not represented within the International Coffee Organisation, gathering governments, hence mostly coffee producing countries. Thus, coffee producers may have a favourable bargaining position in this respect.

Rather than focusing on rules of origin and labelling requirements with their negative impact on competition, it might be preferable at the international level to push for a broadening of TRIPs Art. 23 special protection for wines and spirits by geographical indications to other products, in particular coffee, in addition to implementing domestic legislation on access and benefit-sharing.