



**AFRICAN DEVELOPMENT
BANK GROUP**

**PROJECT: MODJO – HAWASSA ROAD PROJECT PHASE I
(Modjo- Zeway Road Section)**

COUNTRY: ETHIOPIA

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT & RESETTLEMENT
ACTION PLAN SUMMARY**

Date: June 2013

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ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

SUMMARY

Project Name : **Modjo – Hawassa Phase I (Modjo – Zeway) Highway Project**
Country : **Ethiopia**
Project Number : **P-ET-DB0-018**

1. Introduction

Road infrastructure plays a key role in the social and economic well-being of a society. The proposed Modjo-Hawassa road is part of the Trans-African Highway, the Cairo-Gaborone-Cape Town highway, the longest amongst the Trans-African highways, covering a total of more than 10,000km and linking, within its central part, Addis Ababa with Kenya and the port of Mombasa. The Kenyan section, from Moyale to Isiolo and Nairobi, is under rehabilitation and thus the rehabilitation of the Ethiopian part, will complete the upgrading/rehabilitation of the link Addis-Mombasa. The Modjo –Hawassa road project is a continuation of Government efforts to improve the standard of Trans-East African Highway as a member of COMESA countries and its import-export corridors to minimize the cost of its transit traffic. The Modjo-Hawassa road has also quite significant national and international tourist flows using the road to visit important tourist attraction sites in the Southern National Nationality People Regional State (SNNPRS) and Oromia National Regional State (ONRS); the known destination are Abjata Shalla Lakes National Park (ASLNP), and generally the lakes strip that include Hawassa, Zeway, Shalla, Langanu and Abjata. The proposed road project will give momentum to the already accelerating tourism industry.

The Ethiopian Road Authority (ERA) sought for this valuable road project and awarded Techniplan International Consulting firm to undertake study & design for the project road in two phases.

The Modjo-Hawassa Road Project is to be implemented in two Lots. Lot 1 is Modjo-Zeway Road Project which is the focus of the Environmental and Social Impact Assessment (ESIA) study and this ESIA summary, and Lot 2 is Zeway – Hawassa Road Project which starts near Zeway town and terminates at Hawassa town. Lot 1 Modjo – Zeway town covers a total length of approximately 93km, and it requires opening of a new pavement of 4 lane dual carriageway and construction of various other road components such as bridges, culverts, and development of ancillary works (material sites, camp & garages).

The project is therefore classified under Schedule I according to EPA environmental guidelines hence require full ESIA. Likewise, according to AfDB's policy & guideline, the project is classified under Category 1, and therefore requires preparation of an ESIA as well as preparation of standalone ESMP. This ESIA Summary has been prepared in accordance with AfDB's Environmental and Social Assessment Procedures (ESAP). In addition, over 200 persons will be involuntarily displaced by the project. Since the ESIA is based on a detailed engineering, a full Resettlement Action Plan (RAP) has been prepared and is included as Annex 1.

2. Project Description and Justification

The proposed Lot 1 Modjo – Zeway Road Project starts at Modjo town in Oromia National Regional State (ONRS) by making connection with the Adama-Addis Ababa Highway Road, and terminates near Zeway Town having a total length of 93km. All the new dual carriageway

route section fall in ONRS which include the Modjo Municipality, and woredas of Lome, Bora and A/T/J/K in east Shewa zone. The geographic coordinates are 515964.35E 949152.25N & 465818.80E 878018.17N at the start and end respectively.

The project road is aligned approximately 2-5Km on both sides of the existing route and main towns. The project is designed to DS-1 standard, total length of 93km having a right of way (ROW) of 70m. It traverses flat and rolling land for about 76% and 24% respectively of the total length. There will be two lanes of 3.65m width on each carriageway, paved shoulders of 2m width, and unpaved shoulders of 0.5m width.

Other components include linkroads with 50m ROW. There will be 6 Interchanges (all at grade with roundabouts) to connect the dual carriageway & provide access through the linkroads to the main towns section.

The project road traverses rivers like Modjo, Awash, and Meki rivers requiring construction of major crossing structures. Therefore, a total of 6 river crossing bridges and one railway crossing will be constructed by the project. There will be also construction of 96 major culverts along main stream drainages. A total of 16 Underpass for roads and path, at an average every five km.

Construction of embankment/fill by road projects usually concentrates run off from upper and surrounding micro catchments area. A substantial part of the road project area, over 95% of the total road route length, fall in flat plain topography with poor drainage. This will generally comprise open triangular or trapezoidal channels, where necessary the channels will be lined with concrete or stone pitching to protect from erosion. Discharge points will be provided at reasonable intervals to maintain the natural drainage line of the runoff water as far as possible. The project road also requires construction of other support structures such as retaining walls, terracing in degraded & rugged terrains.

There is no protected area like national park or wildlife reserve in the project road influence area, hence no adverse impact expected or consideration required by the project. A brief summary of the project features & technical parameters is provided in Table 1.

Table 1: The proposed dual carriageway highway main features & design parameters

Main Project Features & design Parameters	Lot 1 Modjo – Zeway New Highway Dual Carriageway Road Project
Standard	DS-1
Design length	90.1km
Carriageways	Dual
Lanes per carriageway	2x3.65m + paved shoulder 2m, unpaved 0.5m
Median width	1.5 m
Interchanges	6 roundabout at the grade level
New Bridges	6 river crossing & 1 railway crossing bridges
Number of Underpasses for roads & paths	16
Number of Major culverts	96

The major land requirement for the project comes from laying the new dual carriageway pavement & ROW (70m), and together with the link roads a total of 654.78ha of land will be taken permanently. Material sites which include development of borrow pits & quarry sites

will take up 60ha of land, and the total land for establishing the camp & garages would be 20ha. The total land requirement for the project is therefore calculated to be **734.78ha**.

The existing Modjo-Hawassa road is providing service for various slow and fast moving vehicles, mixed motorized –non motorized means of transport, which significantly reduced its efficiency and also results in accidents that take away human life and in a considerable loss of resources. The traffic flow on the project road has manifested a marked increase over the last eight years with average annual growth rates between 11 and 13%. Furthermore, the traffic trend and transport demand study foresees a significant increment of traffic in the coming years, which cannot be accommodated by the existing road. The traffic volume projection for the year 2030-34 showed over 10,000 as compared to the present average 3,000AADT. Congested traffic in urban sections also results in a high level of pollution from poorly controlled exhaust gases.

The existing Modjo-Hawassa asphalt road has failed to sustain the growing traffic flow rate and axle load volume, long haul and local transport demands as well as social and ecological safety rules. Most of all, the growth & transformation strategy which is formulated to bring about fast economic development in the country and the present & ever increasing economic development in the recent years requires an improved & modern road and transport system to carry agricultural input & products, raw materials and industrial products.

3. Policy, Legal and Administrative Framework

The relevant policy and legislative framework was reviewed to make sure that the proposed project is in line with the available national proclamations, since wherever unwanted adverse environmental and social impacts appear they need to be treated in accordance to the available legal framework. The most important policy documents include Environmental policy of Ethiopia (1997), Growth & Transformation Program, Health Policy, Population Policy, Women Policy, HIV/AIDS Policy, Resettlement & Rehabilitation Policy and AfDB Policies.

The Constitution of the Federal Republic of Ethiopia is the basic legal framework. Other relevant legislation include proclamation on Environmental Impact Assessment Proclamation, health, rural land administration & use, land exportation for public purpose, forest development conservation & utilization, conservation of culture & heritage. These documents provide national policy proclamation regulations that the proposed project has to integrate with or adjust accordingly.

The Environmental & Social Management Manual (ERA 2008), Environmental Impact Assessment Procedural guideline (EPA 2003) were reviewed so as to undertake the study according to the national guidelines & requirements. African Development Bank's group Policy on the Environment (AfDB 2004), and related ESA Procedure (AfDB 2001) were reviewed to identify policies that can be triggered by the project development & follow the funding procedure.

4 Description of the Project Environment

The project road directly traverses woredas located in Oromia Region, East Shoa zone, in Lume, Bora, and Adami Tulu Jido Kombolcha woredas. The sub-sections below describe the biophysical, social and cultural environment of the project area in Ethiopia.

Bio-Physical Environment

Topography: The road project traverses through two major river basins of the country, majority of the first section from the starting point at Modjo town up to Alem Tena area falls in Awash River Basin & the remaining section fall in the Rift Valley Lakes Basin (RVLB). Majority of the land form is characterized by flat land and depressions that formed the lakes, run off from the highlands drains through stream channels. Generally, the elevation in the road project area ranges from 1600masl to 2000masl.

Climate: The project is located in a warm temperate zone, and the mean daily temperature ranges from 12.5°C to 31.5°C area-wide, with 6.6-21°C excursion in Modjo and 8-31°C in Hawassa. Annual rainfall varies from 750mm to 1250mm area-wide increasing from 875mm at Modjo to 1,100mm in Hawassa. Two rainy seasons are experienced annually, the main rainy season lasts from the end of June to the end of September, the lesser rainy season from the end of February to the middle of May, the rest of the months in the year being generally dry.

Soil and geology: The soils in most part of the road corridor are light reddish and light gray soils with varying proportions of sand gravel silt and clay, and they are dominantly used for crop cultivation. The project road crosses mainly Quaternary Deposits and Rocks of Volcanic Origins. The geology in the project road route corridor from the start to the end is made of two litho-stratigraphic units. It's made of Alluvial & Lacustrine Deposits with Volcanic which consist mainly of sand, silt and clay with thick deposits of Volcanic Ashes and Tuff.

The RVLB is an intercontinental geological fault stretching for about 6,400km from Syria to Mozambique. There are two recently formed fault lines along the Modjo-Hawassa road which crosses the main road east west coming from Lake Zeway to the east and further continuing to the western highland across farmland. The first Fault is at about 76km from Modjo and the second fault is located just after one km.

Water resource and quality: Generally, rivers with perennial flow are scarce and the main rivers traversed north to south by the road project include Modjo & Awash (drain in to Lake/reservoir Koka), and Meki (drains in Lake Zeway). The rivers usually attain the highest discharge during the wet season and fed into the lakes. Local people and study documents indicated that soil erosion and sedimentation is the major problem affecting the streams and lakes water quality.

Soil erosion gullies and land degradation: The proposed road project route corridor mainly follows a flat plain topography and hence soil erosion and land degradation may not be considered as a problem. However, soil erosion is observed at some locations along the route in Lume and Bora weredas, and also stream channels used as cattle path for watering and grazing, especially to the lakes and surrounding floodplains. On the other hand erosion and siltation can be caused by construction activities or improper land use in the upper catchments, leading to blocking of drainage and pipes followed by flooding.

About 4% of the proposed dual carriageway route corridor presents potential erosion and degradation risks unless supported with proper land use and SWC measures in the micro catchments area.

Important habitat flora and fauna: There are no protected areas like national parks, wildlife reserve etc traversed by the proposed road route, however the Koka (artificial lake) and Zeway (natural fresh water lake in the rift valley) are important aquatic habitat for various type of bird and fish species, and also have significant socio economic value to the local people.

Dense acacia woodland used to be the dominant natural vegetation in the road project and surrounding environment as reported by local elders, and during the various consultation meetings. At present, the main terrestrial habitat in the road project section are mainly associated with the remnant acacia forest and scattered trees in the farmland. Significant portion of the natural vegetation has disappeared following establishment and expansion of settlement centers and intensification of crop cultivation, deforestation for fuel wood and charcoal making. Natural vegetation is still the main source of fuel wood for people in the project area and elsewhere in the country. The remaining natural vegetation, especially acacia species is cut and prepared for charcoal sale. Youth are engaged in charcoal business as observed during site visit.

The land cover in the proposed dual carriageway route corridor generally alternates between agriculture and acacia woodland cover with various flora combinations, and the main flora species include *Acacia tortilis*, *Balanites aegyptiaca*, *Calotropis procera*, *Ehretia cymosa*, *Echinops sp.*, *Parthenium hysterophorus*, *Solanum incanum* and *Xanthium spinosum*. *Parthenium hysterophorus* and introduced invasive species found in the project road area.

Socio-Economic Environment

Demographic Characteristics: The total population in the project affected weredas is 483,104 out of which the majority (60.5%) live in the rural areas. A/T/J/K woreda is the most populous woreda followed by Lome and Bora weredas respectively. The sex ratio of the affected weredas is 102 which indicates a higher proportion of male population. The distribution of sex ratio among the weredas is uneven. The lowest sex ratio (90) is observed in the Lome while a higher ratio is observed in East Shoa Zone weredas (105) Adami Tulu Jido Kombolcha weredas (including Meki and Zeway towns).

The project starts at Modjo town and traverses 1-2km away from the main towns located on the existing Modjo-Hawassa asphalt road such as Ejere, Koka, Alem Tena, Meki, Abosa and Zeway. The total population of the affected towns is 132,497, and amongst the towns Zeway (Batu) is the most populous (33%) followed by Meki (27%), and Modjo (22%) which are the capitals of the affected weredas. The population density along the project road ranges between 115 to 174 persons per square km in Bora and A/T/J/K.

Land use and vegetation cover: The majority of the proposed road route corridor (97%) traverses in smallholder mixed crop cultivations (main crops being Maize, Sorghum, Wheat, Pulses, Pepper etc) in sparsely populated rural settlements. The starting of the road route corridor falls in Modjo town urban settlements, otherwise, the project corridor traverse in sparsely populated rural village settlement with very limited service and infrastructure condition.

According to the RAP study findings, 126 housing units will be affected fully, and 124 housing units will be affected partially by the new dual carriageway construction. The new dual carriageway will cross main roads, people & livestock paths and community roads (mud), regional roads (gravel), and also the existing Modjo – Hawassa asphalt road (at one location about 1km south of Ejersa town). The project will provide a total of 6 roundabouts for the major roads junctions, 16 underpasses will be provided to community roads & paths.

Economic activities: The area of influence is characterized by intensive cultivation, with low level rain fed crop production. In most of the weredas, a large proportion of the households cultivate less than 1 ha of land, which is greater than 0.5 ha of land which is the minimum requirement to fulfil the minimum food needs of an average household for a year.

The total cultivated area in the project affected woredas was 128,419 hectare and the total volume of crop production was around 2,118,626 quintals in the year 2009. In the year indicated about 41,634 ql of chemical fertilizer and 37,057 quintals of improved seeds were distributed to the farmers in the area.

Majority of the rural farmers practice rain fed cropping. Few small holders are engaged in irrigated agriculture using water from the lakes while the others rent out their holdings to operators who use own diesel generators to pump out the water from the lakes. Major irrigation crops grown around lakes Koka, Meki, and Zeway comprise onions, tomatoes, cabbage, maize and rarely papaya and water melon. During the year 2009 the total land under irrigation in all project affected woredas was 9,820 ha. There is enough demand for agricultural outputs from the irrigation sites as it is retailed in close proximity to the major markets (Addis Ababa and Adama).

Livestock is an integral part of the farming system in the project area and are economically complementary to crop production. It provides fertilizer for crops and, to a lesser degree, it supplies milk, meat, cash income and serve as an investment against risk for rural households. In times of famine, livestock is sold to purchase food. The official animal population estimate in the affected woredas amounts to about 636,126 of which 279912 cattle, 61228 sheep, 152630 goats, 2459 mules, 49112 donkeys, 1132 horses, 89653 poultry and 541 beehives in 2009. 60% of the livestock population is located in A/T/J/K woreda, while 26% and 13% are raised in Lume & Bora woredas respectively. The livestock pattern is cattle-goat-sheep-donkey.

Fishing is another important economic activity practiced mainly in lake Zeway and Koka reservoir. Fishing in the lake increases during January-March due to the growing demand in the fasting period and to spawning aggregation of tilapia which becomes more vulnerable to fishing. Lake Zeway can give a maximum yield of about 3000 ton/yr.

There is an abundance of construction materials such as sand in the project area, particularly around lake Koka, Bora woreda and Meki town. These areas are the main supply points of sand to the Addis Ababa construction industry. Currently the production of construction sand takes place in the sites and has become an important mean of income for the local community.

Investment: Cut flower and vegetable are fast growing export businesses along the project road mainly in the Lake Zeway Area at 165 km from Addis Ababa. The volume of export of these products is growing and currently showing good prospects. As a result of the attention given by the government to this sector, a substantial number of investors are investing in the area. Currently several foreign and domestic investors are completing their constructions, and a large proportion of them already started production and export of roses to the European market. Lume and Adamitulu Kombolcha woredas are the most important areas for the expanding activities.

Tourism: Lake Zeway and associated island & monasteries are important tourist destinations in the last section of the new dual carriageway road route in the A/T/J/K woredas.

5. Project Alternatives

The existing Modjo-Hawassa asphalt road, the no-project alternative or “base scenario”, has failed to sustain the growing traffic flow rate and axle load volume, long haul and local transport demands as well as social and ecological safety rules. Furthermore, the no-project alternative does not support the growth & transformation strategy which is formulated to

bring about fast economic development in the country. Therefore the no-project option was not evaluated as a feasible option.

Thus, excluding the “base scenario” option, three alternative options have been identified and considered for the proposed Modjo-Hawassa Road Project. These are:

- Option 1: Expressway
- Option 2: Dual Carriage Highway
- Option 3: Full Upgrading of the existing road

Option 2 was selected as the preferred option (this project) on technical, economic, social and environmental feasibility. The description of Option 2 is provided in Section 2 of this Summary.

Option 1 follows almost a similar alignment with the exception of the fact that (i) the land take requirement is 150m in the Right of Way and an overall land take of 3419ha (ii) the option has 8 grade interchanges designed to connect the existing town link roads to the expressway (iii) several bridges and overpasses. Option 1 was found to be expensive and involving a lot of structures.

Option 3 has two carriageways laid along the existing route, the ROW expands from 30 to 50m, and total length amounts to 203.3 km, of which 138km of interurban sections and 63km of bypasses around 9 towns. The land take requirement is 950ha. Widening of the existing road will significantly affect public facilities, irrigation farms and trees/shrubs along the route. It will result in clearing of old indigenous roadside trees around Mojo river crossing bridge.

On social impacts, construction of the Expressway (Option 1) entails the highest total compensation budget for affected farm land and property (ETB 774,732,259) followed by Upgrading the existing road (option 3) (Birr 427,339,360) and the Dual Carriage Highway (option 3) (ETB 415,932,730), see table below. The total estimated budget requirement for compensation of properties affected by the three alternative routes includes compensation for affected houses, annual crop land, and trees. Budget is also allocated to compensate for land that may be temporarily affected due to quarry, detours and camp sites.

Table 2 Summary of Budget Requirement for the options analysis

Item Description	Upgrading Existing Road	Dual Carriage Highway	Expressway
Compensation for affected houses and fence	168,473,140	71,814,800	126532934
Compensation for Permanently affected crop land	173,273,300	275,066,430	571,821,625
Compensation for Temporary loss of land for quarry, camp, detour	39,470,000	3,947,000	3,947,000
Compensation for affected eucalyptus trees	9,341,920	65,037,000	72,363,200
Compensation for affected Electricity and Tele poles	36,781,000	67,500	67,500
Total	427,339,360	415,932,730	774,732,259

6. Potential Impacts and Mitigation Measures

Positive and Beneficial Impacts:

Regional Integration: The proposed new dual carriageway highway will bring significant benefits to the regional and country economy following adequate, safe, cost effective and reliable transport service. A considerable reduction in vehicle operating costs is anticipated once the project has been implemented. Businesses and communication between regions, and

most importantly import and export from the central part of the country to Djibouti through Hawassa will be facilitated and strengthened. At the moment this trade and communication between regions and Djibouti is constrained mainly due to the lack of standard transportation facilities, poor existing road condition and congestion in urban centres and crossings. The road project also facilitates communication with link roads along the route. This will create efficient inter-zonal and regional accessibility and significantly reduce distances travelled by the communities of the area.

Reduction in Travel Time and Costs: At the moment trade and communication between the regions in the proposed road corridor and Djibouti is constrained mainly due to the lack of standard transportation facilities, poor existing road condition and congestion in urban and trade centres. The road project will facilitate communication with link roads along the route. This will create efficient inter-zonal and regional accessibility and significantly reduce travel time and costs.

Reduced Air Pollution and reduced GHG emissions: The proposed new dual carriageway highway will contribute to reduction of air pollution from vehicular emission since it diverts traffic from densely populated urban road sections (like Meki, Koka and Zeway) where it causes adverse effects like pollution, accident risk, and inefficient transportation.

Employment Opportunities to locals: The project construction is estimated to take about 3 years, hence significant benefit is expected from employment opportunities to local communities during this period. The youth and women residing in the project area will benefit from the employment opportunities created due to the construction of the road.

Proposed enhancement measures include: (i) employment of work force mainly from the locality where the construction work is on-going; (ii) employment of women and provision of training for women in the different skills; (iii) employment, wage system, and other administrative measures for the local workforce should be in line with the country's law.

Creation of income generating activities: The project will increase non- agricultural employment opportunities for local communities Businesses such as shops, catering services (or small bars and restaurants) located along the project road and near construction camps could earn additional income due to the presence of large numbers of construction workers.

Negative Impacts:

Some of the significant adverse impacts and proposed mitigation measures are outlined below.

Impact on soils: The soil of the project area are easily erodible and can easily be impacted by construction related activities and lack of vegetation cover. The topography of the route corridor is flat plain land. Construction of the new dual carriageway pavement in the area will require fill embankment through appropriate material. The proposed Modjo - Zeway Road Project is expected to undertake a total earth cut volume of 735,990m³ of which about 475,671m³ can be used as a fill material for construction of embankments. The remaining spoil earth materials have to be disposed properly to prevent siltation and sedimentation of streams and lakes around the construction sites.

The other impact on soil can result from compaction due to machinery and vehicular movements affecting crop fields and grasslands. Soil compaction results in poor productivity and poor vegetation growth, due to lack of air circulation and lowered infiltration of rain

water. Impact on soil pollution can also occur due to leakage, inappropriate disposal of fuel, oils and other chemicals utilized by construction machineries & garage works.

Mitigation for Impacts on soils: (i) cover embankment sides with grass and ensure growth through watering, and prohibit animal grazing at road shoulders and embankment sides; (ii) surplus excavated top soil shall be stored and used to rehabilitate degraded grounds; (iii) loosen compacted soils upon commissioning and vegetate with appropriated seedlings, as appropriate.

Impact on Water Resources and Water Quality: The direct effect on water resource in the project area is mainly associated with rivers that are traversed by the road and where new crossing structures will be constructed (Modjo, Awash, and Meki Rivers). The impacts on water resource can also extend to the nearby & surrounding lakes Koka reservoir and Lake Zeway. The project road construction related activities like excavation, generation of wastes, installation of embankments & crossing bridges, direct water abstraction for construction purpose may have effect on the available water resource. Rivers, ponds, groundwater and springs are used for potable supply purposes throughout the project area for drinking, washing purposes and cattle watering.

The adverse impact on water quality of the rivers & lakes is related to increase of suspended sediment and risk of residual chemical contamination from bridge construction, earth work and other construction activities. Oil products used for the machinery and vehicles during construction works and waste generated in camps and garages could also be sources of pollution to the water resources in the project influence area.

Mitigation for Impacts on Water Resources: These include; (i) Construction of settling basins to remove silt, pollutants, and debris from road runoff water before it discharges in to stream drainage; (ii) Construction of bridge & other major earthwork works around water sources should provide for soil erosion protection measures and scheduled during dry seasons to minimize the entry of soil material into the rivers by flooding and runoff water; (iii) Alternative water supply sources shall be provided for construction camp sites to avoid interference with local water supplies.

Impact on aquatic habitat and avi-fauna: The project doesn't traverse important protected wildlife habitat area and therefore no major adverse impact anticipated on wildlife by the road project. However, there can be some indirect adverse impact to aquatic habitat and effect on birds and fish species. These include Lake Koka & Zeway and rivers flowing in to them like Modjo, Awash, and Meki rivers, as well as the seasonally inundation areas.

Mitigation for impacts on aquatic habitat and avifauna: (i) Spoil soil should be timely collected and carted away to designated disposal sites. Spoil soil should not be disposed or accumulated at river banks, close to the streams, lakes reservoir, and at water ways and flood routes; (ii) Water quality deterioration caused by pollution from oil products and chemicals can be minimized with timely maintenance of leaking machinery parts and good housekeeping practices in garages, campsites and at refuelling stations by the contractor; (iii) Camps and garages, and associated sanitary facilities should be located away from sensitive ecological sites, ponds and floodplains and away from water sources and river crossings;

Land Take: The major direct adverse impact is due to permanent land take for new road route alignment corridor ROW and associated structures, link roads & interchanges. Temporary impacts on land include activities such as access development of material sites (quarry/borrow), establishment of camp and dump sites. Land in the proposed corridor is

currently used for crop cultivation that provides the major means of livelihood to the rural population.

Mitigation for land take: The Resettlement Action Plan developed for the project should be implemented. No construction should commence until all land and property expropriation procedures have been completed, replacement land allocated, and cash compensation paid.

Impacts from Construction Camps: The establishment of construction camps and residential houses for the construction work force and the Engineer's camp sometimes competes with the limited local resources. The existence of camps for the constructions workers close to settlement areas could influence negatively on local life style and sometimes may lead to cultural and social conflicts. To avoid such type of conflicts and problems the establishment of the construction camps should be in a planned way without negatively affecting the local resources and society.

Mitigation for Construction Camps: These include; (i) Camp location and design should not be on environmental sensitivity of sites like forested areas, but consider the future use of the facilities upon commissioning of the project. These considerations can assist safe and economical use of resources and can benefit the local administration and/or the surrounding community up on handing over of the camp facilities to the client. (ii) The continued use of the buildings and the camp facility after commissioning of the road will avoid demolishing and disposal problems that could result both in economic losses and environmental damages to the surrounding area. (iii) Consultation with the regional, zonal or woreda administration shall be done to assist in identification of the appropriate camp site that can serve dual purposes.

Impacts on quarries, borrow sites and associated roads: Existing access or new access roads have to be developed to quarry sites resulting in adverse impact to the existing land use which may include crop cultivation, grazing, vegetation. The impact is considered to be temporary however, the land is likely to suffer long-term reduction in productivity as a result of soil compaction by haulage vehicles. This cannot easily be reused using simple country ploughs and draught animals. Compensation paid by contractors for temporary loss of use of the land is unlikely to take this factor into account, and adverse financial effects on landholders are likely to result.

Mitigation on quarries, borrow sites and associated roads: These include (i) The construction contracts should have a clause prescribing quarry sites and access roads as part of the site, so that the powers and authority of the Engineer extend to them in the same way as to other areas where works are being undertaken; (ii) The construction contracts should have a clause requiring the contractors to prepare detailed Site Environmental Plans (SEPs) for approval by the Engineer, prior to commencement of any site development, and to execute all work at the sites in accordance with the plans. The SEPs should address all matters relevant to environmental protection and the minimization of impacts.

Road Safety and hazards: Road accidents are mainly associated with poor road conditions, lack of road signs, lack of awareness on road safety by users & pedestrian. The proposed Modjo-Zeway Road Project has high standard & quality to ensure traffic safety, and accident can be minimized with implementation of proper traffic operation & regulation. During operation the project road traffic levels are likely to increase, and with high speed vehicles having potential risk of accident. Potential accident risk is expected to be high, particularly in the proposed new road route until road users adjust to the new conditions. For mitigation a Road Safety Campaign is proposed in the area.

7. Environmental Hazard Management

The failure of environmental mitigation can result in serious impacts such as erosion, increased road accidents and disruption of the community lifestyles. Construction of roads also involves occupational health and safety risks to road workers, primarily in the areas of storage and handling of dangerous materials, and operation of heavy machinery close to traffic, slopes and watercourses. The anticipated risks in this project include: (i) Exposure to excessive dust particles or toxic fumes from bitumen and other chemicals used in road works; (ii) Potential for collapse of trenches; (iii) Risk of bush fires during dry seasons; (iv) Risk of rock falls during blasting; (v) Risk of fuel spills and therefore contaminating soil, surface water and groundwater.

The risks can be mitigated to a large extent through: (i) Strengthening staff skills and training in environmental management; (ii) Monitoring environmental actions and responsibilities and making provision for remedial actions; (iii) Planning for remedial measures in case initial planned actions are not successful; (iv) Limiting time of exposure to dust particles, chemicals and noise; (v) Establishing safety and inspection procedures in materials handling, operating heavy equipment and constructing trenches; (vi) Safe handling of toxic materials, explosives and other hazardous substances.

The Contractor shall submit an Emergency Response Plan containing Method Statements covering the procedures for the main activities which could generate emergency situations through accidents or neglect of responsibilities. These situations include, but are not limited to: (i) Accidents at the work place; (ii) Accidental fires; (iii) Accidental leaks and spillages; (iv) Vehicle and plant accidents.

8. Monitoring Programme

The purpose of environmental and social monitoring is to quantitatively measure the compliance of the contractor(s) on the implementation of the proposed environmental and social mitigation measures as well as the effectiveness of the mitigation measures. The environmental monitoring program will operate through the preconstruction, construction, and operation phases. It will consist of a number of activities, each with a specific purpose, key indicators, and significance criteria.

Environmental management and monitoring plans are necessary to minimize or offset adverse impacts or enhance beneficial aspects, in order to achieve the objectives of the proposed road project and ESIA study. The purpose of an Environmental & Social Management Plan (ESMP) is to set out how the adverse environmental and social impacts identified in the environmental study will be controlled during project construction and operation/service phases. Therefore, these measures need to be integrated with the overall project implementation during the construction and operation phases.

The overall road project and environmental management responsibilities are to be shared between several governmental and non-governmental organizations, each with specific executive responsibilities for particular aspects, which are exercised during the various stages of project preparation, implementation and subsequent operation and maintenance. The principal agency concerned with the environmental management is the project owner, Ethiopia Road Authority (ERA), and specifically the Environmental and Social Management Team (ESMT) of ERA.

The responsibility to implement majority of the routine maintenance activities during the operation phase which may include routine and periodic pavement, earthworks and drainage system maintenance fall on ERA operation & maintenance division. ERA may hire contractor depending on the type & extent of maintenance activity. The staff of the department or a designated unit in the department should acquire basic knowledge of the environmental monitoring activities to effectively assume the responsibility, training of personnel is, therefore, essential. The ESMT is expected to play an overall advisory role during this phase.

Mitigation measures proposed for socio economic issues like compensation to damaged properties, and lost/degraded plots of land should be handled by a committee, composed of representatives of all stakeholders including ERA, other local government administrative organs, NGOs, and the affected group as per the RAP.

The primary responsibility of environmental management during the project construction phase lies with the project construction contractor & supervision consultant. For this purpose, the supervision consultant shall establish Environmental Management Unit (EMU) responsible for undertaking an independent monitoring & supervision of proposed environmental mitigation measures, and other environmental issues during the project construction phase. The EMU should consist of an environmentalist & a sociologist who will be actively engaged to integrate environmental supervision work with the overall project construction supervision activity and the Resident Engineer (RE). Once the construction is completed, the ESMT and the district offices will take over the management aspect in collaboration with other concerned development and regulatory agencies at regional and federal level.

During the project construction phase, internal monitoring will be conducted mainly by the contractor on duty, Environmental Management Unit (EMU) as part of the overall construction supervision consultant, and the ESMT. The RE and the environmental supervisor will prepare monthly progress reports which also highlight environmental performances of the project work and submit it to ERA. The Environmental reports will be transmitted through ERA to the Regional and Federal Environmental Protection Agency (EPAs), who are the overall supervising environmental institutions.

An overall supervision and monitoring of the environmental conditions and performances of the project will be made by the Environmental Protection Authorities both at federal and regional level. External monitoring can be conducted with government financing institutions like the Ministry of Finance and Economic Development (MOFED), as well as the AfDB international financing institution that will check the project performances against their funding policy & environmental guidelines.

9. Public Consultations and Public Disclosure

Relevant stakeholders include local people and administrations traversed by the project, and most importantly Project Affected People (PAP). Public Consultations have been made in woredas traversed by the project road including Bora, Lome and Adami Tulu Jido Kombolch woredas. Consultation were also conducted in kebeles and towns in or near the project road route corridor such as Modjo, and Zeway. Participants of the various consultation included municipalities, sector offices, religious leaders, business people, residents etc.

The main objective was to seek information on available and practiced legislation and procedures, and collect the opinions of stakeholders regarding to various environmental and social issues related to the road project options implementation.

The new dual carriageway road was fully supported by all persons and institutions met during consultations. The existing route was rejected by the consulted persons because the upgrading option does not add to the travel needs of the population nor significantly improve the road network. The upgrading of the existing alignment is therefore expected to have a minor impact in development of the area. The variation of compensation costs between the two routes is not anticipated to be much in volume.

The woredas Bureau of Land and Environmental Protection (BoLEP) indicated high accident rates along the Modjo-Hawassa, especially in relation to non-motorized transport system, and tried to establish various regulations but none of them significantly impacted on the accidents. The project is expected to provide a long lasting solution to the safety problems at the same time contribute to economic growth. Overall, the local people & various stakeholders are interested in the implementation of the proposed road project.

The total ESMP implementation cost is ETB 29,491,000. Majority of the ESMP costs are capital cost required for installing mitigation, compensation & enhancement measures while the recurrent costs are mainly associated with monitoring aspects of the ESMP. The required cost for the ESMP shall be included in the road project cost. Funds shall be sought from NGOs & international facilities like Global Environment Facility (GEF) for implementing & management of the tree replanting initiative /program.

The total budget requirement for compensating the affected properties has been estimated to amount to ETB 213,650,247. The costs include compensation for affected houses, relocation and implementation of M&E as well as 15% contingency.

10. Complementary Initiatives

Complementary community initiatives are planned to enhance project benefits, improve socio-economic conditions of the local communities, and ensure project sustainability. The proposed interventions are tree planting; establish water supply schemes in the camp, Road safety campaign, HIV/AIDS prevention and Control. The complementary interventions are proposed based on the general understanding of the road project area & constraints grasped during the ESIA study and consultations, and hence require further onsite assessment & consultation with concerned stakeholders.

Tree Planting Initiative: The project plans to prepare 300,000 to 1,000,000 tree seedlings to be planted on the roadside and also in selected degraded land in the Modjo – Zeway road micro catchment. The main objective of this enhancement measure is to (i) improve stability of road structure; (ii) prevent soil erosion in the micro-catchment, whilst enhancing local communities soil and water conservation initiatives (iii) provide shade; (iv) replace lost vegetation in the new road corridor (v) contribute to climate change adaptation and mitigation initiatives. The project plans to use indigenous tree species like *Gravelia robusta*, *Jakaranda mimosifolia*, *Acacia melanox* and selected multipurpose local flora species. Selection of species and location of targeted degraded area for planting will be determined based on consultation with local community, woreda agriculture & environment office and research institution like Wondo Genet University. This complementary initiative is expected to contribute to the regional & national effort of combating global warming & climate change as the planted trees can serve as CO₂ sink, following maturity & full vegetative growth.

Road Safety Awareness Campaigns: The project will include an item of road safety campaign and education programs for the road users during construction and operation. The existing road is one of the roads identified as high risk roads in the country. The National Road Safety

Council (NRSC) is piloting various activities of road safety in the area. They form part of the UN designated Road Safety Decade of Action which has 5 pillars for enhancement. These could be complemented by the awareness and educational campaigns under the project. Such activities shall be performed during construction where most contractors tend to be either ignorant or negligent about road safety measures. During operation, educational campaigns will have to target all users including operators of animal driven carts. The service provider for this activity will have to collaborate with the NRSC, Police and Traffic Controllers of Oromia Transport Agency. Part of inputs to be procured during the road safety educational campaigns would be distribution of reflectors to all carts in the area an intervention which is already showing significant results in Oromia and SNNP Regions.

HIV/AIDS/STI & TB Awareness Campaign: The project has incorporated in its design awareness and prevention programs against the spread of HIV/AIDS and STI. The HIV/AIDS Coordination office at ERA has developed TORs for recruitment of Service Providers, and the bidding documents ensure that special clauses are included in the Contractor's contract. To ensure sustainability of programs and activities, when the road gets operational phase, ERA will impresses it upon the service provider to engage the various networks both at woreda and kebele levels. These include NGOs, CBOs, Ministry of Health, Oromia Aids Bureau and others who will be expected to continue with the awareness and prevention activities. The specialized service providing firm for implementation of HIV/AIDS and STD program will combine the delivery of Gender Mainstreaming Plan of Action with HIV/AIDS, STI awareness and prevention program. To this end the firm will prepare Gender Mainstreaming Plan of Action.

Gender Mainstreaming Plan of Action: In line with the Bank's policy on Gender, the project plans to mainstream gender and ensure equal opportunities between men and women in project planning, implementation and benefits. Women together with men have fully participated in the consultation process and views of both genders have been incorporated in the project design. As part of women's economic empowerment, the project shall apply the national practice of allocating a quota of at least 30% of semi-skilled and non-skilled jobs to women at the construction site.

Further recommendations have been made in the ESIA for a Project Specific Gender Plan of Action, inclusion in the bidding documents, as part of the health and safety measures, the requirement for providing adequate facilities for female workers just as those for the male. These should include, but not limited to, provision of ablution corners, adequate and secure accommodation for women, resting space dedicated for women, code of conduct to prevent abusive language and unwanted approaches at the work place.

Once the project is completed, both women and men will benefit from its use in various forms one of which will be dedication of produce stores at the planned roadside services to be constructed as part of the project. The service providers for the HIV/AIDS, STI campaigns will ensure appropriate focus is given to adolescent girls and boys in program delivery.

Resettlement/Compensation (RAP): The details and estimates for Resettlement and Compensation are included in Annex 1 of this summary.

11. Conclusion

The existing Modjo-Hawassa road is providing service for mixed motorized & non-motorized means of transport which significantly reduce its efficiency and also result in accidents. The accelerated development of the country and in particular the GTP requires an efficient road

network, and implementation of the proposed Modjo – Zeway new dual carriageway project is essential in this regard.

Implementation of the road project will contribute to reduce accidents and the associated loss of resource and human lives. The present and potential high emissions from vehicular congestion, especially in town sections, and the associated impact on public health will be reduced by the project.

The major adverse impacts with the project result from land take for new road pavement & material sites development. This will result in loss of productive agriculture land, loss of settlement house, loss of scattered trees in the acacia woodland & remnant Montana forest. Other adverse impact by the project includes erosion & sedimentation, water pollution risk, public health, HIV/AIDS. With implementation of the proposed mitigation measures & proper compensation the adverse impact can be controlled to acceptable level.

The recommendations provided to ensure that the project is implemented in a sustainable manner include; (i) Update and implementation of the proposed environmental mitigation management & monitoring plan based on site specific conditions; (ii) inclusion of the necessary environmental clauses in the project tender & construction contract document so as to ensure the implementation of the proposed mitigation measures; (iii) ensure independent environmental supervision through establishment of Environmental Management Unit (EMU) as part of the supervision consulting service. The EMU shall be staffed with qualified professionals (environmentalist & sociologist) to the effective implementation of proposed mitigation management & monitoring measures; (iv) integrate the project road with all concerned regional & national government development plans, among others are municipality & weredas in the project road area; (v) implement the RAP; (vi) Strengthen the capacity of ERA ESMT to inspect proper implementation of ESMP during construction and to carry out routine inspections during the road service period; (vii) Support the new road route micro catchment treatment and management through promoting and implementing conservation measures.

References

Modjo-Awassa Dual-Carriageway Highway (DCH) Project, Concept Design Report, Technical Paper No.2, Environmental and Social Impact Assessment Report for Modjo – Hawassa Road (Lot 1 Modjo – Zeway), May 2013 by Techniplan.

Modjo-Awassa Dual-Carriageway Highway (DCH) Project, Concept Design Report, Technical Paper No.2, Environmental and Social Management Plan for Modjo – Hawassa Road (Lot 1 Modjo – Zeway), May 2013 by Techniplan.

Modjo-Awassa Road Project – Lot 1 Modjo – Zeway, Phase II - Detail Engineering Design, Resettlement Action Plan, May 2013 by Techniplan.

RESETTLEMENT ACTION PLAN SUMMARY

Project Name: Modjo – Hawassa Phase I (Modjo – Zeway) Highway Project
Country : Ethiopia
Project Number: P-ET-DB0-018

1. Introduction and Background

The Modjo-Hawassa road project starts at Mojo town in Oromia National Regional State (ONRS) and terminates at Hawassa town, capital of SNNPRS. The road corridor traverses five administrative weredas in the ONRS (Lome, Dugda Bora, Adami Tulu Jido Kombolcha, Arisi Negele and Shashemene) covering about 95% of the total road length. The remaining section of the road is located in SNNPRS Capital, Hawassa town, and constitutes only 5 % of the total road segment.

This Resettlement Action Plan (RAP) covers the first 92.5 km stretch of the proposed road project (Lot 1) that starts at Modjo town and terminates at 92.5 km in Zeway town. The RAP identifies adverse social impacts caused by the construction of the New Dual Carriageway Highway and to suggest mitigation measures within 70 meter ROW.

During the ESIA survey, the community discussed on the route the Modjo Hawassa road alignment should follow. The option preferred was to create a new alignment. The communities expect a higher positive impact from the new separate alignment in terms of improved access and opportunities for development of businesses. The majority (about 60%) of the new alignment, however, traverses in smallholders crop cultivation land, hence productive agricultural land take and subsequent effects on people livelihood is the main adverse impact. This RAP is, therefore, undertaken for the “new Dual Carriageway Highway” option, for which a nominal right-of-way width of 70 m was adopted.

The RAP summary provides the project description; project objectives; legal framework; legislation on land expropriation and compensation; eligibility criteria and entitlement; institutions for RAP implementation; implementation schedule; grievance redress mechanism; public consultations and community participation; persons affected by the project; socio-economic profile of affected households; fully and partially affected households; vulnerable households; valuation methodology; project impacts on properties; compensation levels for properties and assets; monitoring and evaluation; RAP implementation cost; and RAP disclosure.

2. Project Description

The dual carriageway highway will have two carriageways of 7.30 metres (plus shoulders) separated by a median of 1.5 meters, and will have at grade intersections with the existing roads and adequate link roads to connect to the major urban centers. The highway has a total length of 92.5 km from Mojo – Zeway. The route starts from the existing Addis Ababa-Adama road (515487, 948066), and ends at the southern exit of Zeway town. Main features of the new highway are outlined hereafter. Junctions in the form of roundabouts have been

included to ensure smooth interface with the twelve main crossed roads. The through-flowing highway vehicles will be given priority over transversal secondary traffic.

The roads intercepted by the highway will be improved in the direction toward the nearest towns, in order to offer the users a similar level of service as that of the highway. The design speeds over the upgraded transversal roads range from 90 to 120 km/h. accordingly; ERA's DS2 standard has been applied. Additional link roads have been introduced for towns which are not already connected to the new highway through an existing road. As extensions of the expressway these connections should have similar geometric characteristics and provide the same level of service say with design speeds of 120, 100 or 90 km/h. accordingly, as said, the DS2 standard of ERA has been assumed.

Roads crossed by the highway with roundabout prioritized junctions

	Roads crossed by the highway	Towns served
1	Existing Mojo – Hawassa	Koka
2	Existing Mojo – Hawassa	Ejersa
3	Meki – Dugda	Meki
4	Ziway – Butajira	Ziway

3. RAP Objective

The main purpose of this Resettlement Action Plan (RAP) is to identify adverse social impacts caused by the realization of the new dual carriageway highway and to suggest mitigation measures and procedures to be followed. Assessment was undertaken at 70 meter ROW of the road alignment, with the objective of quantifying and valuing the impacts on the local people and properties in order to propose measures that compensate for such adverse impacts. This RAP covers the first 92.5 km stretch of the proposed road project (Lot 1). The project road starts at Mojo town and terminates at km92.5 in Zeway town, traversing five administrative woredas namely, Lome, Dugda, Borra, Liben and Adami Tulu woredas.

4. Legal Framework

The Constitution of the Federal Democratic Republic of Ethiopia (FDRE) has development strategies which alongside the legal and institutional frameworks for land acquisition, compensation and rehabilitation measures for Project Affected Persons (PAPs) provide the policy, legal and administrative framework. Apart from the broad policy frameworks, the main reference behind the preparation of the Resettlement Action Plan (RAP) is the Environmental Policy of the Federal Democratic Republic of Ethiopia. The Policy has been developed as a national instrument enhancing the objectives of the Constitution and setting out clear-cut directions with respect to environmental concerns particularly in terms of regulatory measures adopted as well as in the process of design, implementation and operation of development projects. Likewise the Road Sector Environmental Assessment Guideline prepared by the Federal EPA in 2004 will be used during the RAP implementation. The Federal legislation on Expropriation of Land for Public Purposes & Compensation (Proclamation No. 455/2005) established detail procedures for setting the time limits within which land could be acquired after a request is received from a proponent, principles for assessment of compensation for properties on the land as well as for displacement compensation. This Proclamation will be referred to for this RAP as it is vested with the power to expropriate rural or urban landholdings for public purposes.

5. Legislation on Land Expropriation and Compensation

According to the Federal Legislation on Expropriation of Land for Public Purposes & Compensation (Proclamation No. 455/2005), the power to expropriate landholdings mainly rests on woreda or urban administration authorities. Article 3 (1) of the Proclamation states that a woreda or an urban administration shall, upon payment in advance of compensation in accordance with this Proclamation, have the power to expropriate rural or urban landholdings for public purpose where it believes that it should be used for a better development project to be carried out by public entities, private investors, cooperative societies or other organs, or where such expropriation has been decided by the appropriate higher regional or federal government organ for the same purpose.

Under Proclamation No. 455/2005, the responsibility of a proponent of a proposed project does not extend beyond the payment of compensation for properties and displacement. In other words the displaced people need to seek resettlement options in the framework of land administration systems of the relevant rural or urban land administration.

In addition, the Proclamation deals with determination of compensation having articles on the basis and amount of compensation, displacement compensation, valuation of property, property valuation committees, complaints and appeals in relation to compensation. As per this Proclamation, a landholder whose holding has been expropriated shall be entitled to payment for compensation for his/her property situated on the land for permanent improvements he made to such land, and the amount of compensation for property situated on the expropriated land shall be determined based on replacement cost of the property. For houses in urban areas, the amount of compensation should not be less than the current market value of construction. In addition to the amount of compensation for the property expropriated, the Proclamation also gives a provision for cost of removal, transportation and erection.

Proclamation No.55/1993, article 5. 2(k), states that ERA shall use, free of charge, land and such other resources and quarry substances for the purpose of construction of highways, camps, storage of equipment and other required services, provided. However, ERA will have to pay compensation in accordance with the law for properties on the land it uses where such land has assets belonging to other persons. The Right-of-Way (ROW) is the land allocated and preserved by the law for the public use in road construction, rehabilitation and maintenance work. Thus, property within those limits could be removed/demolished by the road authority with appropriate compensation.

6. Eligibility Criteria and Entitlement

The ERA Resettlement Policy Framework (RPF) is in line with the eligibility criteria contained in OP 4.12 of the World Bank's operational manual and AFDB Involuntary Resettlement Policy. Accordingly, compensation for lost assets and replacement costs is made for both titled and untitled land holders and property owners. In this project the absence of formal titles will not be a barrier to compensation, resettlement assistance and rehabilitation.

All PAPs and organizations losing land, buildings/houses, crops or sources of income will be compensated or rehabilitated according to the types and amount of their losses (permanent or temporary) at replacement cost. All PAPS, legal and illegal, are taken into consideration and accounted for. Also due compensation will be paid for public utilities, telephone and electricity poles as well as water pipes.

Compensation, both small and large amounts, will be paid either in cash or by cheque, following the agreement with the individual PAPs. Disbursements will be ensured by ERA and will take place in the presence of the compensation committee as well as the spouse or spouses of the individual PAPs.

The cut-off date for compensation eligibility has been set at 30 November, 2012. A careful count and identification of the existing properties and affected persons has been conducted together with local officials. The compensation principles for various affected population groups are given in the entitlement table below:

Entitlement Matrix

		Affected Population Categories	Compensation Entitlements	Compensation Strategy
URBAN POPULATION	Partially Affected Households	Residence	<ul style="list-style-type: none"> - Full compensation to rebuild new house - Compensation value inconvenience cost, to enable PAP to build better house and the cost of during transfer to the new place. 	Relocate/rebuild house within the remaining plot
		Business	<ul style="list-style-type: none"> - Full compensation to rebuild new house. - Compensation value inconvenience cost, to enable the PAP to build better house and the cost of transport during transfer to the new place. - Compensation for income restoration during construction and transfer. 	Relocate/rebuild house within the remaining plot
	Fully Affected Households	Residences	<ul style="list-style-type: none"> - Land replacement for housing - Full compensation for housing - Disturbance allowance to cover cost of relocation and transport 	Provide new land for rebuilding house in the same town
		Business	<ul style="list-style-type: none"> - Land replacement to re-establish similar business 	New plot with locational advantage to re-establish business (income restoration)
		Government Buildings	<ul style="list-style-type: none"> - Full compensation for rebuilding new offices 	New land for rebuilding the facilities
	RURAL POPULATION	Affected Crop Lands	Due to realignment	<ul style="list-style-type: none"> - Land on abandoned route after reinstating - Forgone benefits for 10 years and replacement land
Borrow and Quarry Sites : temporary			<ul style="list-style-type: none"> - Forgone benefits for the duration of impact. - Restored farm land after closure of sites 	The temporary access road will be restored and returned back to the same owner after the construction is over.
Borrow and Quarry Sites: Permanent			<ul style="list-style-type: none"> - Forgone benefits for ten years 	

7. Institutions for RAP Implementation

The overall responsibility for the RAP implementation is vested to the RAP Committees that would be established at the woreda, town municipality, and kebele levels. ERA in collaboration with the woreda administration will establish the RAP Committees. The RAP committees will comprise representatives from sector offices, representatives from project affected persons (PAPs) and the ERA right-of-way agent. Relocation and compensation will be the major responsibility of the RAP Committees. To this end, the RAP Committees will prepare a practical relocation and compensation schedule. Funds for payment of the compensation will be made available by the ERA through the ROW unit. The RAP Committees will prepare monthly and quarterly progress reports which will be delivered to the Resident Engineer office, ERA ROW unit and the woreda administration.

8. Implementation Schedule

The prime objective of the RAP is to ensure that compensation for houses and other properties is disbursed in time to enable the affected households construct a habitable dwelling house before demolition commences – a minimum of 3 months and a maximum of 5 months will be available. PAPs indicated that a new house can be built within 1 month if all the materials have been assembled. The RAP Implementation Schedule has made provision for a series of activities before road construction commences to ensure PAP participation and consultations are carried out, namely:

- Land distribution for relocation
- Compensation to PAP's
- Construction of new houses
- Income restoration measures

The following Gantt Chart elaborates the road map for implementing the RAP.

RAP Implementation Chart

No	YEAR 2013												YEAR 2014												YEAR 2015												YEAR 2016											
	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D				
1	PRECONSTRUCTION PHASE																																															
1.1	ERA submits the RAPS budget to MoFED																																															
1.2	ERA Reviews and submits the RAP to AIDB for review																																															
1.3	Approval for RAP by the AIDB																																															
1.4	Establishment of Rap- Implementing committee (IC)																																															
1.5	Tendering and Award of design and supervision contracts																																															
1.6	Conduct a right-of-way survey																																															
1.7	ROW Report and detailed drawings showings project land acquisition requirements submitted to ERA																																															
1.8	Detailed drawings mains services relocation requirements submitted to service providers																																															
1.9	Implementation of RAP																																															
1.1	Conduct a one day workshop for the IC members and local authorities concerning the process and responsibility																																															
1.11	Confirm compensation and rates and relocation options through consultation with RAP IC and the Woreda councils																																															
1.12	Payment of Compensation																																															
1.13	Provision of land																																															
1.14	Construction of new houses																																															
1.12	Installation of utilities for PAPs (electricity, and telephone)																																															
1.13	Relocation of public utilities (electricity, and telephone by service providers)																																															
2	CONSTRUCTION PHASE																																															
2.1	Procurement process (Tender and award for construction)																																															
2.2	Mobilization of the contractors																																															
2.3	Land/property expropriation process during construction																																															
2.4	Site clearance inspection and certification on completion of the works																																															
3	MONITORING AND EVALUATION																																															

9. Grievance Redress Mechanism

In case a dispute arises between the RAP team and project affected persons the preferred option of dispute settlement is through amicable means. This will save time and resources as opposed to taking the matter to court. To ensure that the PAPs have avenues for redressing grievances related to any aspect of land acquisition and resettlement, procedures for the redress of grievances have been established for the project. The objective is to respond to the complaints of the PAP speedily and in a transparent manner. The mechanism is designed to be easily accessible, transparent and fair. In order to ensure that the interests and assets of the affected enterprises and individuals are not invaded or damaged, grievances and appeals are to be addressed through arbitration procedures.

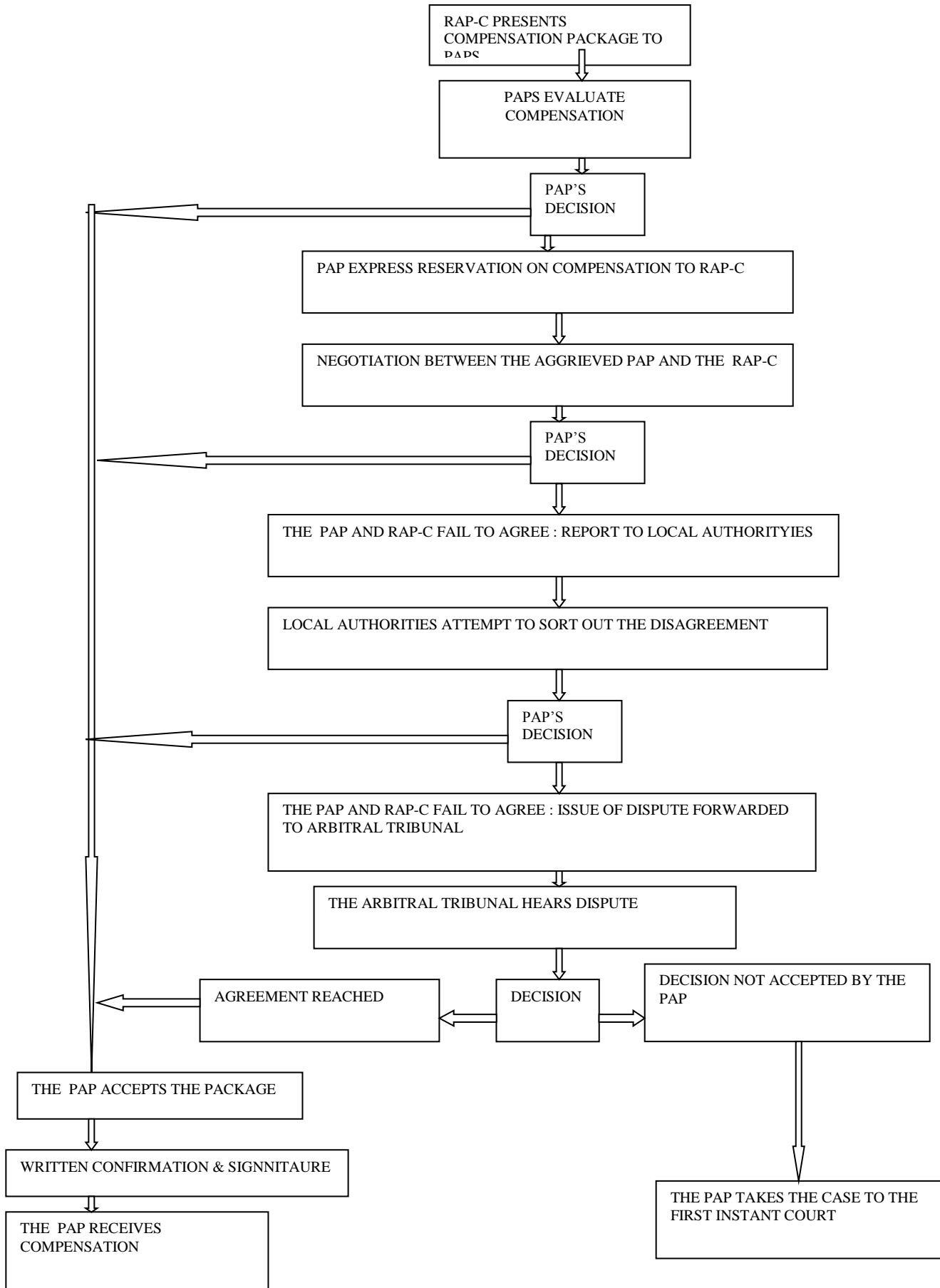
Arbitral tribunals will be formed in Adami Tulu, Dugda, Borra, Lome, and Liben Woredas and will settle disputes arising in the respective kebeles. The arbitral tribunals will be established from the outset instead of leaving the appointment of the arbitrators to the disputants. This is the preferable option since it could take a lot of time to appoint arbitrators if left to the disputing parties. If any of the parties disagrees, the aggrieved party has the right to appeal to the ordinary courts.

There are two levels through which the aggrieved PAP can seek recourse. The PAP may go first to the RAP Committees. If the dispute is not resolved by the RAP Committees, then the PAP will be referred to the arbitral tribunal. The composition of the arbitral tribunal is as follows:

1. At woreda level: members shall comprise: 1 from the woreda Administration, 2 from the affected kebeles, and 2 elected by the PAPs.
2. In Urban areas (towns): members shall comprise: 1 from the woreda Council (Chairperson), 1 from the Woreda Urban Development Department, 1 from the Kebele Administration, 2 elected members by PAPs from the affected communities – but not directly affected by the expropriation.
3. In Rural Areas: members shall comprise: 1 from the Woreda Council (Chairperson), 1 from the Woreda Agricultural Office, 1 from the Kebele administration, 2 elected members by the PAPs from affected community - but not directly affected by the expropriation.

The following flow chart explains the various stages through which a grievance can go through:

Project Affected Persons (PAPs) grievance resolution channel



10. Public Consultations and Community Participation

Public consultations play a key role in enabling the public to participate in the planning of projects. At the beginning of the preparation of this RAP, there have been several public consultations and participatory briefings and meetings, which have taken place with the project affected people (PAP), local communities and government personnel.

The public consultations process has been carried out based on the objective of ensuring that stakeholders' concerns, experiences and recommendations are integrated in the RAP, increasing public awareness and understanding of the project, and enhancing the RAP through the support and direct involvement of the stakeholders. Consultations were undertaken in the months of August 2012 to November 2012. Information was communicated and opinion of the affected people recorded.

The definition of “fully affected and partially affected” households (HHs) was agreed upon before the commencement of the survey in order to clearly distinguish the impact on people by the road project. The definition was applied during the survey and during discussion with PAPs and other stakeholders as follows:

Fully Affected: In this case almost all the plot area is taken and the PAP cannot re-establish herself/himself in the remaining compound area, since the former use and practice of the houses is no longer possible. These HHs will receive full compensation to rebuild new houses, compensation value (inconvenience cost) and compensation for income restoration during construction and transfer for loss of business.

Partially Affected: Partially affected HHs are those who will be able to continue living and working within their present plot without any need of relocation to a new plot of land. The partially affected HHs could lose their housing facilities fully. In other cases they could lose part of their buildings while part of their building is not affected. The important factor being that the availability of land within the existing plot where they can reconstruct a new house. In either of the cases, the partially affected households will be compensated for the part of houses which will be affected by the project, and they will re-construct buildings in the remaining plot area of their present compound.

In the special/rare cases where a house which has been fully affected and yet the land holding is still available, the PAPs relocation to a new site vis-à-vis staying in the same plot depends upon the remaining plot size and the interest of the PAP. If the remaining area of the compound is adequate to construct the same size of the demolished house and the PAP decides to stay in the same site, then the woreda/town will not provide new land to the PAP. In almost all cases PAPs prefer to stay in the same location if remaining area of compound is adequate; otherwise, the PAP may decide to be relocated to a new site given by the woreda/town. In both cases the PAP is will be fully compensated for the house and structured damaged.

During the field survey, public consultation meeting were held with local officials. Major outcomes include:

- List of PAPs within the ROW of the project has been identified in the presence of local administrative officials, public representatives and professionals. The consultant had given the full list of PAPs to each respective body in towns and villages.
- Local authorities had agreed on the cut-off-date of 30 November 2012. They agreed to take precautionary measures to prohibit new construction close to the right of way.

- The local authorities had been requested about the availability of land for those who would be displaced and resettled. They all agreed to provide land for resettlement of affected households.
- Local authorities had been informed about their role in monitoring the proper usage of compensation payments, especially in restorations of livelihoods. They all agreed to encourage and help the affected people to properly use the compensation. Local authorities agreed to extend the necessary support to allow these segments of the community rebuilding their residences and restoring their livelihoods.

11. Persons Affected by the Project

The field survey showed that 2,479 owners of properties will be affected by the project road (Lot 1). Among the PAPs the majority (82.5 %) is male headed households, 16.7% are female headed households, and 0.8% is institutions (public and government). The total family members of the project affected households are 16,280 out of which the majority (51.3%) are male and the remaining (48.2%) are female. Names of the heads of households and institutions identified during the field survey have been documented.

12. Socio-economic Profile of Affected Households

The overwhelming majority of the affected HHs (98.9) are reported to be farmers. This is a trend to be expected in all woredas since the whole project road is aligned in rural areas. The remaining 1.1% comprises housewives, government employees, students, etc. The ethnic background of the affected HHs shows that (89.6%) belong to the Oromo ethnic group followed by the Amhara (6.8%) and persons with SNNP ethnic background (2.3%) and the minorities (0.4%) with Tigray background. The PAPs belong to three major religions; those that profess Ethiopian Orthodox Christianity make 85.7%, Muslim HHs (10.8%) while 2.8% of the affected population follows the Protestant faith. The HHs reported to be married constitute (80.2%) while 15.7% have dissolved their marriages mainly by widowhood (14.5%) and in rare cases by divorce (1.2%). The Literacy level of the affected HHs is low in that (59.4%) of them are illiterate. The proportion of the HHs that poses the basic skill of reading and writing comprises 24.7% and the HHs that have attended primary and secondary education are (13.6%). HHs with college background constitute only 0.4%.

13. Fully and Partially Affected Households

Fully Affected: Fully affected households face a situation in which almost all the plot area is taken; hence, the PAP cannot re-establish the former use and practice of the houses in the remaining compound area. In the project area among the total 247 households affected, 122 households will be fully affected. These HH will receive full compensation to rebuild new houses, compensation value (inconvenience cost) and transfer for loss of business elsewhere.

Partially Affected: Based on the field assessment, among the total 247 households affected, 125 households will be partially affected by the project. These partially affected households will be able to continue living and working within their present plot without any need of relocation. Thus, they will be compensated for the houses affected by the project.

14. Vulnerable Households

The socio-economic survey identified 661 vulnerable PAPs categorized as the elderly people (above the age of 60) who are 293 and women heads of households (368). The names of project affected vulnerable household heads have been documented. The proportion of

widows is significantly high across the woredas as most widows often do not re-marry. On the other hand traditional marriage practices followed leave women with limited resources. The project will, therefore, pay particular attention to support and care for these vulnerable households. The additional support will be made in rebuilding their houses, transferring and transporting their household items and materials to the newly constructed residential houses or houses used for business purpose.

15. Valuation Methodology

15.1 Method of Valuing Compensation for Loss of Structures

The estimation of the unit cost of compensation was provided by woreda Administration. The following table presents the average unit costs applied for estimating the budget of reconstructing the affected houses and fence.

Unit Cost of Replacement

No	Description	ETB
1	Cement Block Wall / m ²	1,500
2	Mud Wall Corrugated Sheet (MWCS) / m ²	1,200
3	Tukul / m ²	642
4	Wood and Vegetation Fence /m	200
5	eucalyptus tree	280
6	Crop land compensation/ha	197,350

15.2 Method of Valuing Compensation for Loss of Trees

Compensation for eucalyptus tree will be based on yield and market price. Proliferation of stems is taken into consideration for determining the yield of eucalyptus trees. It is known that eucalyptus tree can actively give production every five years. For the first cut period, which is after five years from its plantation date, only one stem could be harvested. Then during its consecutive cut periods, the tree proliferates itself with three stems. Therefore, in the successive cutting periods three stems can be harvested from the same original root. Thus for sake of valuation three times cuttings is considered. Accordingly, one eucalyptus tree is supposed to yield seven stems in the coming 10 years. The current market price for one stem is ETB 30 (average price from woreda agriculture offices). The compensation rate for the loss of one eucalyptus tree, therefore, will be ETB 280.

16. Project Impacts on Properties

16.1 Houses and Fences Affected: During the field work, the affected properties within the 70 meters ROW have been assessed. The findings showed that the project would affect 247 housing units (42014.65 m²) distributed over the 5 woredas. Out of the total affected house areas the majority (187) is made from Tukuls (36707.09 m²), followed by 47 Mud Wall Houses with Corrugated Sheet Roof (MWCS) (3995.7 m²), 5 houses made of Hollow Cement Block (HCB) (57.13 m²) and 8 made of Mud Brick wall (MB) (1254.73 m²). Approximately 98206 m of vegetation and wood fences will also be affected.

16.2 Farm Area Affected: The findings of the fieldwork showed that the project road will affect a total of 676.48ha of strips of annual crop land. The main social impacts of the road project on crop land occurs in Dugda (199.2ha), Bora (188.9ha), Lome 182.6 and Adami Tulu (82.3ha). In Liben, the affected cropland is 23.3 ha. This shows that the adverse impact of the

project in terms of expropriation of cropland is most severe in Dugda, Bora, Lome and Adami Tulu woredas.

16.3 *Electricity and Telecommunication properties Affected:* The project road will affect 76 electricity and 4 telecommunication poles.

16.4 *Impacts on Trees:* In addition to farmland there are also eucalyptus trees within the ROW along the road alignment. It is estimated that a total of 15,110 eucalyptus trees will be affected by the project.

17. Compensation Levels for Properties and Assets

17.1. *Compensation for affected houses and Fences:* The total budget requirement for compensating the affected houses has been estimated to amount to ETB 29,934,268.00. In particular ETB 4,794,840.00 will be allotted for Mud Wall Houses with Corrugated Sheet Roof (MWCS); ETB 23,565,952.00 for Tukul; ETB 1,504,920.00 for houses made of Mud Brick wall (MB) (1273.73sqm); ETB 68,556.00 for Hollow Cement Block(HCB) houses, and ETB 19,641,200.00 of vegetation and wooden fences.

17.2. *Compensation for Affected Farmlands:* The 676.48 ha farmlands affected by the project road will be paid at the rate of Birr 19,735.00 for one hectare of farmland per year (Birr 197,350.00 per hectare per 10 years). The total budget requirement for compensating development and opportunity cost of farmlands affected by the road is estimated to be ETB 133,499,381.00.

17.3. *Compensation for Eucalyptus Trees:* An estimated 15,101 eucalyptus trees will be affected during the project road construction. The compensation budget requirement for the affected eucalyptus trees is estimated to be ETB 4.23 million at the rate of ETB 280 per tree.

17.4. *Compensation for electric and telecommunication poles:*The total budget required for relocating the affected 80 poles will be ETB 40,000.

18. Monitoring and Evaluation

18.1 *Internal and External Monitoring:* Internal and External monitoring and evaluation process have been designed as an integral part of the RAP with the objective of ensuring the RAP implementation complies with the recommendations set out in the RAP. Internal monitoring activities will be handled by the Environment Management Unit (EMU) of the Resident Engineer office. The EMU will inspect and supervise the RAP implementation on day to day basis and capture the progress in the monthly and quarterly progress reports, which are submitted to ERA.

External Monitoring will also be conducted by an independent consultant who will be hired by ERA. The independent consultant will monitor and evaluate the RAP by adopting the set of process and output indicators prepared. Finally ERA will inspect the monitoring report and evaluate the RAP in consultation with the Resident Engineer, the independent consultant and if necessary with Woreda/Municipality/kebele administration offices and the PAP by adopting the process and output indicators.

18.2 *Monitoring Cost:* In the affected woredas 5 RAP Committees (one in each woreda) will be established, with the overall responsibility for the coordination, monitoring and reporting of the RAP implementation. Budget requirement for monitoring the RAP is estimated to be ETB 330,000.

19. RAP Implementation Cost

The total budget requirement for compensating the affected properties has been estimated to amount to ETB 215,824,098.35. The costs include compensation for affected houses, relocation and implementation of M&E as well as 15% contingency.

Summary of Total Budget Requirement

Item Description	Budget
Compensation for affected houses	29,934,268.00
Compensation for affected fences	19,641,200.00
Compensation for affected farm area	133,499,381.00
Compensation for affected trees	4,228,280.00
Compensation for affected tele & electric poles	40,000.00
RAP implementation and M&E budget	330,000.00
Sub-Total	187,673,129.00
Contingency (15%)	28,150,969.35
Grand Total	215,824,098.35

20. RAP Disclosure

The Resettlement Action Plan will be officially disclosed through the Oromia and SNNRS Radio and TV Programs, by ERA. The Oromia and SNNR radio and TV programs are widely followed in the project area. Later on copies of the detailed RAP will be distributed to local councils and the displaced persons in a form, manner, and language that are understandable to them. In addition, the RAP will be disclosed through the Federal Government media, namely the Ethiopian Television and Radio and the Ethiopian Herald and Addis Zemen newspapers. The executive summary of this RAP will also be posted on ERA's official web site.