

PROJECT PROFILE ON Freight transport

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PROJECT PROFILE ON FREIGHT TRANSPORT SERVICE

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I. Executive summary

This project profile is prepared to assess the viability of running Freight transport service, in Addis Abeba city administration. Hence Market, Technical, Organizational and Financial study was made to investigate the viability of the envisaged project.

This project profile on Freight transport service has been developed to support the decision – making process based on a cost benefit analysis of the actual project viability. This profile includes marketing study, service and financial analysis, which are utilized to assist the decision-makers when determining if the business concept is viable. Ethiopia has a private sector driven Freight transport service sector. Currently, Freight transport operators (service organizations and associations) are organized as domestic and cross-border service providers. Accordingly, 120 domestic, cross-border 105 and 59 special freight carriers operating in both categories are operating in the sector. Of these, 155 are unions (55%) and 129 (45%) are share companies and privately owned. A total of 2,482 domestic and 12,766 cross-border vehicles are in operation

The total investment capital is Birr 688.40 million. Out of the total investment capital, the owners will cover Birr 206.52million (30 %) while the remaining balances amounting to Birr 481.88 million (70 %) will be secured from bank in the form of term loan.

As indicated in the financial study, the percentage of net profit over the estimated revenue is computed to be 22.26%. The breakeven operational level that is expected to be performed is determined to be 1.42 round trip per month, the payback period is 7.38 years

Therefore, from the aforementioned overall market technical and financial analysis we can conclude that the freight transport business is a viable and worthwhile.

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1. Background information

1.1. Project Description

The main purpose of this profile is to serve as a part of the City marketing. City Marketing can be effective if it is used to provide investors with essential information. A city should be clear about what it wants to achieve by working with a private sector partner; what it can offer to ensure a partnership can happen; and why investing in that particular place presents a distinctive and attractive investment prospect. Hence, Addis Ababa City Investment Commission commits itself in identifying the more viable and feasible 200 areas of investment among which 44 are selected for farther investment profile development. Thus, Of the shortlisted investment areas, this investment profile document deals on **Freight Transport** investment area which is identified as one of the most feasible investment area in the country with a head office at Addis Ababa, the capital of the country. The project coverage of the investment area incorporate both cross boarder and local freight forwarding services with the required standard of services and technology.

1.2. Service description

Freight forwarding transport service or the whole transportation sector investment in Ethiopia is yet protected to Ethiopians. As per the recently developed logistics strategy of the country by the respected ministerial office, clearly put to open the sector for neighboring countries within two years time and to investors from the whole world in 5 years range. (National Logistics strategy 2018-2028)

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The Ethiopian government imports on average 2.5 to 4 million tons of dry bulk cargo (grain, fertilizer, coal, and sugar) annually. The Country spends about ETB 6 Billion on average for sea transport, port service and haulage to inland destinations. Moreover, suppliers impose USD 10 per day for ship demurrage for staying at anchorage beyond the grace period. Suppliers and carriers are aware of the poor scenarios in logistics at the destination ports and their imposition of high demurrage rates arise from the poor logistics performance. This indicates how the country is not able to control such avoidable costs. To this regard the country developed a 10 year strategic plan of the sector which will serve as a road map to improve the efficiency of the sector that is mainly the land transport, which is in the hand of the country, as Ethiopia is land locked.

The country annual import cargos have reached 14 million tons. This amount can be classified as; Containerized: 3.2 million metric tons, which is 23% , Dry bulk: 4 million tons, 28% , Petroleum products: 4.1 million tons, 29%, Steel and other general cargoes: 2.9 million tons, which is about 20%. Ethiopia's export cargo has reached 2 million tons annually, with an estimated annual export cargo of 65,000 containers or 1.3 million tons through the port of Djibouti. But the government of Ethiopia is strongly working to diversify the import and export gateway other than Djibouti port with different ownership modality.

This will diversify the sol transport corridor, Addis Ababa-Djibouti, in to multiply ways. In addition the recently china- Africa road belt project is also under progress that will increase the connectivity of different nations of Africa through road way.

The other factor which is under consideration of improving the freight transport efficiency is the truck millage. Increasing cargo trucks mileage per year will increase the likelihood of

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speeding up freights shipments from ports. Since cargo trucks in Ethiopia cover on average merely 60,000–80,000 KM per year, it is difficult to pick up cargo on-time. A simple comparison of similar operation in South Africa goes beyond 120,000KM per annum (UNDP 2017 study report). In addition the study report reduces the average truck utilization of the country to 50,000KM annually. The other fact revealed by the study was, the life time of trucks on operation in the country showed 57% are more than 10 years and the average monthly turn round of the trucks is 2.5.

The country articulates the objectives in the strategic time to:

- Trim down the import lead-time of foreign currency permit to shipment delivery from 123 to 40 days.
- Cut the import cargo transit time of port discharge to an inland destination from 46 to 7 days.
- Reduce export lead-time of inland bank permit to shipment on board of a vessel from 36 to 7 days.
- Transport all import bulk cargos from the port with zero demurrage cost of vessels.
- Decrease import cargo port dwell time from 40 to 3 days.
- Increase export cargo containerization within Ethiopia from the current 33% to 90%.
- Reduce dry bulk vessel anchorage time from 35 to 2 days.
- Cut break-bulk vessel anchorage time from 15 to 2 days.
- Increase Ethiopian trucks annual mileage from 70,000Km to 120,000km.

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In addition, it is clearly put on the strategy to import trucks with more loading capacity of 70-100 tons to maximize the economics of scale principle in the sector so that replacing the old trucks with new technology is currently under progress with special support of the government with loan facilitation and tax relieve. All these facts justify how much the investment area of freight transport is highly promising in Ethiopia.

1.3. Project location and justification

The investment opportunity here under discussion is intended to be operated in Addis Ababa as a center of operational dispatch, the political capital and the most important commercial and cultural centre of Ethiopia and also the diplomatic centre of Africa, hosting a number of international organizations, such as the headquarters of African Union (AU) and the United Nations Economic Commission for Africa (UNECA).

Moreover, national and multinational business organizations, charity organizations and even governmental organizations (federal level), embassies and many more are resides at the city with their head office. This indicates that the major decision regarding business transaction is believed to be done with the top management of the organizations as potential partner in the intended business.

In addition, Addis Ababa is, geographically, located at the heart of the nation almost from all corner of the country. Ethiopia is also assumed as one of the fastest growing economy in Africa and in the world even though the current temporary political scenario affects its move adversely.

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The road connectivity and accessibility rate of the country increases as the road network plan increases in to 200,000km by the end of 2020. Having the land locked nature of the country the government is investing on inland dry ports to facilitate and reduce the cost of demurrage on port facilities of the neighboring countries. One of the facilities in this regard is found at Akaki kality sub-city of Addis Ababa which is one of the 8 similar facilities owned by the government in the country. This service is yet monopolized by the government, but there is a clear strategic direction and additional progresses to open the sector for private investment. This by itself is an additional opportunity for the freight transport investment area, as it is one criteria to be considered for the undersigned business opportunity.

As one of the two self-governing chartered cities in Ethiopia with the status of a special autonomous region within the national federal government system, its Council is accountable both to the city voters and the federal government. Administratively, the city is divided into 11 sub-cities called kifle-ketemas and 116 woreda, in a total of 540 sq. km land area, which are the lowest administrative units. Therefore, possible non value adding bureaucracies regarding business operation and investment are relatively short and the city administration in general and the sector offices in particular, the investment commission, is strongly working to practice ease of doing business in all dimensions.

Addis Ababa also serves as a main logistics hub for one of African leading and star alliance air way, Ethiopian airlines, and other air ways for the international connections. The Air way passengers and cargo traffic amount reached 5.5 million and 500 thousand tons respectively in 2020 as per the African air ways association (AFRAA) report.

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1.4. Current Freight Transport business in Ethiopia

As it was stated in the above discussion the transport sector is yet protected for Ethiopian investors. But recent practices and the national logistics strategy clearly put to liberate the sector for foreign investors also. Especially the intervention of a private multimodal agent with possibly in different business relationship modalities and the government work to allow the inland dry port service in line with the multimodal operation may have a great contribution towards making the freight transport sector more efficient through creating a competitive business environment.

Currently the cross border freight transport operation with multimodal agreement is monopolized by the governmental organization, ESLSE. All enterprises engaged on the cross border freight transport are dealing with the sol multimodal agent as far as the movements are under multimodal agreement for destinations to the dry port facilities or bonded warehouses. This is not the same in case of uni modal agreement.

Currently there are 12,766 number of truck with average carrying capacity of 40 tons and around 57% of them are more than 10 years life time. The country imported goods amount to be reached more than 16 million ton and it's believed to go beyond it in the year afterward. The current operational measurement indicators of the freight transport like the average turn round and annual distance coverage are 2.5 and 50,000KM consecutively as per the UNDP report. To satisfy the current market requirement of trucks with the current import amount is estimated to be more than 14,000 trucks. This number is subjected for change as the freight amount increases and the more the life time of trucks in the industry increases the less the possibility to stay in the operation as it affects the competitiveness and availability rate of

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the trucks for service. These facts enforce the need for injection of new trucks to the industry with the current state of the art technology.

1.5. Status of The freight transport industry in Ethiopia

In order to streamline incoming and outgoing logistics, it has been planned to increase the performance of the Demiurge Law time standards (at Weight checkpoints, customs checkpoints, loading and unloading stations) to 100% and was able to reach 92.75%. It is planned to transport 19.49 million tons of goods and 16.1 million tons (82.6%) has been transported. The average annual coverage of a truck was targeted to reach 121,250 km and has reached 61,400 km (50.6%).

One Stop Boarder Post: It is one cross-border transit transport service point that renders efficient service for various institutions. This station is a facility to be built under an agreement between countries to reduce the time spent on inspections and related transit costs to facilitate cross-border traffic. The facility, which is being negotiated with neighboring countries to facilitate efficient transit services for landlocked Ethiopia, is currently being built between Ethiopia and Kenya at Moyale, between Ethiopia and Djibouti at Dewale. Ethiopia's transit gates at Metema with Sudan, at Rade with South Sudan, and with Eritrea as well as Somaliland in a place to be decided in the future will be studied and implemented according to the amount of traffic in the next ten-year projection.

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2. Market study, capacity and service programs

2.1. Market Study

2.1.1. Present demand and supply

The national freight transport demand in the current situation is more or less monopolized by the Ethiopian enterprises as it is not yet opened for foreign companies or investors from abroad with none Ethiopian citizenship. This fact could be changed in few years ahead as the national road map shows it will be opened for global economic operators progressively from neighboring countries.

The operational status of the freight transport industry in present years shows that about 95% of the total cargo in our country is transported by road freight service. The operation is undertaken with the number of trucks having a capacity of less than 10 quintals has increased from 30,827 in 20015/16 to 55,797 in 2019/20 and has grown by an average of 16% annually. The number of trucks with a capacity of more than 10 quintals has increased from 95,644 in 20015/16 to 146,263 in 2019/20, with an average annual growth rate of 10.5%.

Freight transport operators (service organizations and associations) are organized as domestic and cross-border service providers. Accordingly, 120 domestic, cross-border 105 and 59 special freight carriers operating in both categories are operating in the sector. Of these, 155 are unions (55%) and 129 (45%) are share companies and privately owned. A total of 2,482 domestic and 12,766 cross-border vehicles are in operation. In terms of service life, on average, 44.6% of vehicles are under 10 years old and 56.4% are over 10 years old. It means that, $12,766 * 0.564$ that equals 7,200 are almost exhausting their competitive service

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delivery lifetime especially for cross boarder freight transport. In other word it becomes clear that only the remaining 5,566 are expected to be active at least for the next reasonable years.

These numbers of the trucks have also another constraint regarding their loading capacity with 40 tons. The country's ministerial office of transport is designing different support packages to upgrade the loading capacities of the truck entering to the industry.

The annual average distance coverage of a truck is reached on 61,400km. To determine the related average, turn round from Addis Ababa to Djibouti comprising of both the inward and outward trip:

Considering the 2022/23 total cargo to be expected that amounts 17.1 million ton or 171,000,000 quintal. The load factor in our situation is considered to be 70%. The average round trip as per the UNDP study is 2.5. Therefore,

- I. Annual freight load expected to be handled (17,100,000ton)÷loading capacity of a truck (40ton) which results 427,500 round trip in the year
- II. The stated annual round trip (427,500) ÷ 12 months equals to 35,625 round per month
- III. The monthly round trip (35,625) ÷ to average monthly round trip (2.5) equals 14,250 trucks with 100% load factor.
- IV. The monthly truck requirement that is 14,250 is assumed to operate with 70% load factor. It is in other words mean 30% of the movement is without load. Therefore the truck requirement with 70% load factor is estimated as= 14,250 trucks* 1.3 that equals to 18,525 trucks with the assumption of maintaining the average round trip at 2.5.

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V. Current available trucks with less than 10 years service time having a 40 ton loading capacity are determined as 5,566.

Therefore, to determine the supply demand gap, assuming the average round trip operation is improved to 2.8, then the required amount of trucks is $35,625 \div 2.8 * 1.3LF$ that equals 16,540 trucks. This indicates that the market is at 22.8% deficit to fill the market gap. This is to say that the industry requires an additional injection of 3774 trucks with the stated loading capacity. This figure might be changed if we consider the 57% over 10 years service time of trucks currently in the industry.

2.1.2. Projected demand

Table 1 The projected freight load amount up to 2030

No	Total projected load (import-export)	Portion coverage by freight vehicles	Budget Years										
			19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
			1	From 17.7 million tone to 30.41 million ton	in million tons	16.1	16.3	16.2	17.1	17.4	19.1	18.5	19.7

Source: FDRE- Transport sector ten-year plan (2020-2030)

Based on the projection of the freight load the corresponding truck requirement is computed and shown in the next table.

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Table 2 Future truck requirement

year	expected cargo to be transported by vehicle/ton	Vehicle Loading capacity/ ton	Months	Expected Average round trip performance/ month	Performance factor in Load factor	Future Trucks need in the industry
2023/24	17400000	40	12	2.8	1.3	16830
2024/25	19100000	40	12	2.8	1.3	18474
2025/26	18500000	40	12	2.8	1.3	17894
2026/27	19700000	40	12	2.8	1.3	19055
2027/28	20900000	40	12	2.8	1.3	20900
2028/29	22100000	40	12	2.8	1.3	21376
2029/30	23300000	40	12	2.8	1.3	22537

** Truck requirements determination = total load to be covered by vehicles ÷ loading capacity ÷ number of months ÷ expected average round trip performance * idle load factor

Based on the data computed above the industry requirement of freight transport trucks need shows increment and the gap between the current supply and future demand has a big margin for new investment.

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2.1.3. Pricing and distribution

The pricing of the freight transport service with cross border transportation is taken from report of the Shippers Council of Eastern Africa (2014). East African Countries Logistics Performance survey 2014.

Table 3 pricing and distribution

No	Origin	Destination	Distance/km	Unit	Cost/TEU	Cost/km	Cost/ton	Cost/ton/km
1	Djibouti	Addis Ababa	925	USD	2050	2.22	68.33	0.074

Based on the above data the price for a single trip freight from Djibouti to Addis Ababa with the current exchange rate of 51.7903 birr/ dollar is determined to be as follows;

$$\text{Price/ton} = 40\text{ton} * 68.33\text{USD/ton} * 51.7903 \text{ birr} = 141,553.25 \text{ ETB}$$

This amount of total price is for the import cargo transport from Djibouti to Addis Ababa. Based on this data the out ward freight transport (export) could be determined considering the 70% load factor. Therefore, $141,553.25 \text{ ETB} * 0.7$ that equals 99,087.28ETB. the total price for a single turn round will be the aggregate amount considered above , which will be 240,640.5 ETB.

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Table 4 The revenue structure with 40 and 70 tons load capacity

No	Description	Loading capacity	Meas't	Utilization	Price/ Ton/ETB	Inward mov't price for full load/ETB	Outward mov't price /75% LF/ETB	Total price for single complete trip/ETB
1	Import-export cargo	40	Ton	75% Load factor (LF)	3,538.83	141,553.20	106,164.9	247,718.1
2	Import-export cargo	70	Ton	50% Load factor (LF)	3,538.83	247,718.1	123,859.05	371,577.15

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With this pricing structure a single truck is expected to generate a total of 5,945,234.4ETB annually with the current average round trip operational level. This amount could be changed with a change in efficiency of operation regarding the round trip.

Service distribution in this regard is mainly considered with the route and the port of discharge the cargos are moving. The current governmental investment and a deal to have in a very diverse route of origin in sea port is expected. Among these ports port of Sudan, Kenya, Somalia and Eritrea are more expected in addition to the main port of Djibouti.

2.2. Truck Capacity

The truck freight transport movements currently operating in the industry are mostly with forty ton loading capacity. The national ten year logistics strategy clearly shows that this fact needs to be changed to a more loading capacity that ranges between 70 to 100 ton.

Actions to support the transformation is under taken by the ministry through injecting different incentives packages for firms to mix up the truck composition with the new intended carrying capacity. This will have a positive impact for optimizing the operational efficiency in maximizing the economics of scale effect. To briefly put the possible effect on the operation is as the loading capacity increases with more or lease constant running cost of the truck minimize the ton/km cost from the relative 40 ton capacity truck cost. Hence, a reduction in ton/km cost will result a reduction in the total transportation cost of a single item. As a result it will increase the competitive advantage of the transport firm in the industry regarding price for the service it discharges.

2.3. Production or operational plan

The operational plan in consideration of the current main gate way for the country's import and export movement that is Addis Ababa- Djibouti corridor the national average round trip is 2.5 per month. This level of performance is considered to improve at least by 12% that pushes the average national monthly round trip to 2.8. The national annual average distance coverage of a single truck is also determined to be 61,800km. The national logistics strategy defined the targeted average annual distance coverage to be 120,000. Therefore, any new entrant to the business has to take the national average round trip and distance coverage as a base line of a minimal operational plan. The UNDP study result revealed that the targeted km distance planned to reach is not ideal, it is an achieved level of operation by African countries like South Africa.

The industry is open for any level of intervention that ranges from a single truck to a number of trucks integrating in association or operation as an independent firm.

3. Material Input and utilities

The transport business the freight transport sector in our context has a cost structure of fixed nature and running costs that relates to the movement of the truck for operation. The fixed cost comprises the purchasing price of the truck, salary for the operator and other staffs, if available, bank interest if there is a bank loan, office rents and the like. Running cost consists of costs that are associated with the movement of the truck in case of duty. Such cost are fuel cost, oil and lubricant, tire, maintenance and operator's overtime payment are the major inputs included.

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3.1. Availability and source of material inputs

The above stated material inputs are plenty available with the national supply system for fuel and private supplier in the market with no difficulty. In addition supplying the material input can be also considered as an addition business intervention area for investment opportunity.

3.2. Annual requirement and cost of input materials and utilities

The annual amount required for the material inputs for a single truck and 50 trucks investment level is presented here under.

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Table 5 Materials input requirement and its relative costs

No	Item	Meas't	Annual Distance to be covered (20% advanced to the national average)	Consumption /KM(average full & empty running)	Total Input required	Unit price	Cost for a single truck investment	Cost for 50 truck investment	Remark	
1	Fuel	liter	74,160	1.84km/L	40,304L	35.6	1,434,834.78	71,741,739		
2	Oil and lubricant	10% of fuel cost					143,483.47	7,174,173.5		
3	Tire cost	No			22	46000	1,012,000	50,600,000		
4	Maintenance cost	lump sum					41,529.60	2,076,480		
5	Over time	days			265	700	185,500	9,275,000		
	Total							2,817,347.85	140,867,392.5	

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4. Technology and Engineering

4.1. Machinery and equipment

The current available trucks operating in the industry are diversified. The most available and commonly used are Sino trucks, c-trucks, Reno trucks, Volvo and many more. Especially the C-truck is the new technology that is recently starting operation with more loading capacity from the previous 40ton. The related current prices of the trucks are estimated to 10 million for 40 ton and 15million for 70 ton trucks (sino , c-trucks or truckers etc). The trucks can be directly imported after the necessary requirements are fulfilled or purchased from importer within the local market.

4.2. Service delivery process and technology utilization

The service delivery process in freight transport operation business involves in two ways. One its option is to for a legal firm with the objective of delivering the stated service having a reasonable amount of this machineries or trucks that enables to compete for a full discharge of a ship load from the sea port to the dry land destination of the customer preference.

The other option of the business is to register and engage with association through which the operational dispatch is handled. The third way of handling the business is through commissioning with the transport firms.

The new GPS technology available and implemented in the industry adds value in trucking the movement and status of the freight for delivery. The utilization of such technology support the firm of the owner of the truck to control the fuel consumption and standard time set for the specific trip.

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5. Human resource and training requirement

5.1. Human Resource

The human resource requirement for the business in which only the main core processes will be hold in house and the rest required service like maintenance will be outsourced with a pre-defined agreement.

Table 6 Manpower requirement and annual costs

S/No	Job Title	Required No	Monthly salary for single employee	Annual salary for single employee	Annual salary for 50 truck operation
1	Operation Manager	1	10,000.00	120,000.00	120,000.00
2	Marketing officer	1	7,000.00	84,000.00	84,000.00
3	Accountant	1	7000.00	84,000.00	84,000.00
4	Cashier and cash collector	1	4000.00	48,000.00	48,000.00
5	Driver	50	6000.00	72,000.00	3,600,000
	Driver allowance	700*265	15,458.00	185,500.00	9,275,000
	Total		49,458.00	593,500.00	13,211,000

5.2. Training Requirement

The required manpower with the specific competency are currently available in the market. The drivers' training institutes operating on the area plays a great role in availing the trained man power for the industry. But those trained workforce from the market need to be retooled for practical application of the skill to accustom the existing machineries and technology. In this regard a defensive driving skill development training for the operators and transport operation management area training for staff members adds value for the efficient management of the operation. In addition, data collection and analysis as well as operational measurement and different utilization standard have to be set in line with the plan of operation. To this end at least 2% of the annual salary needs to be allocated for training and development budget.

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6. Financial Analysis

6.1. Investment cost

Table 7 Initial investment costs

S/No.	Cost item	Amount for single truck		Amount for 50 trucks
1	Crew wage and allowance	593,500	00	13,211,000.00
2	Purchasing cost of a trucker	10,000,000	00	500,000,000.00
2	Insurance	200,000	00	10,000,000.00
3	Inspection and registration	20,000	00	1,000,000.00
4	Fuel cost	1,434,834	78	71,741,739
5	Lubricant and oil	143,483	40	7,174,173.5
6	Tire and Tube*	202,400	00	50,600,000
7	Maintenance and repair**	41,529	60	2,076,480
	Sub total	12,635,747	78	655,803,392.5
9	Bank interest***	651,935	65	32,596,782.5
	Total investment cost required	13,287,683	43	688,400,175.00

Note:

*total tire required for a single truck (22) price of a single tire (46,000) as the existing tire serve for the first year operation only 20% of the cost will be considered

** Maintenance cost = 0.5 * annual distance planned to be covered * 1.12

*** Bank interest = 70% of total investment * 17.8% within 10 years

**** Allowance, fuel cost, oil and lubricant, tire and maintenance cost are running costs therefore, administrative cost can be considered 5% of it

***** The investment opportunity is open even from a single unit truck to whatever number of trucks as per the demand determined. Therefore, the cost above is determined for a single truck then for more truck availability it will be the multiplication of the truck numbers and the single truck cost.

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6.3. Service delivery cost

The service delivery cost of the movement in the current context has a more of price taker nature. The current price for import cargo per ton ranges from 2600-3500 average price 3050ETB and from 1700-2200 average 1950 ETB for export cargo. Considering this figure with average value in both import and export the service delivery price for import full load from Djibouti to Addis Ababa 3050ETB* 40 ton which equals 122,000.00ETB and for export 1950ETB*40ton*0.7LF which equals 79,365ETB. Therefore, the total estimated delivery price for a single complete round trip is estimated to be 201,365ETB (current available price).

If the average monthly round trip is considered to be 3 which is the average performance of the national average and the benchmarked firm performance, then the expected monthly income by a single truck is 604,095.00ETB. This results an annual revenue to be generated by the single truck will be 7,249,140ETB. Therefore, the total expected aggregate income from 50 truck investment is 362,457,000.00 ETB per annum.

The corresponding total running cost that estimated to be incurred per annum for a single truck will be 5,635,254.33ETB that is 156,534.84 per complete round trip plus 3912.98 other administrative cost. Then the total cost expected for 50 truck investment is determined to be 281,958,365.5 ETB. The mark up amount here is 22.26% on each single trip.

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6.4. Financial Evaluation

6.4.1. Profitability

The financial evaluation as per the income estimated to be generated and the net income before tax the investment generate a profits even from the first trip. The percentage of net profit over the estimated revenue is computed to be 22.26%.

6.4.2. Breakeven analysis

The break -even operational level that is expected to be performed is determined to be 1.42 round trip per month based on the following analysis.

$$\begin{aligned} \text{BEP} &= \frac{FC}{\text{Unit selling price}-VC} \\ &= \frac{151,853.93}{201,365-107,205.24} = 1.42 \text{ round trip per month} \end{aligned}$$

Therefore, the business will be at breakeven or no gain no loss position in 1.42 round trip operation. Considering the current average round trip performance 2.5 or the future projected performance 2.8 has a big gap to operate in between without loss.

6.4.3. Payback period

The payback period of the investment is computed against the net annual income and the total investment required. In our case here under discussion the expected annual profit is 1,799,836.99ETB for each truck and totally it reaches to 89,991,849.50 ETB while the total investment required is 13,287,683.47ETB in single truck investment or 664,384,173.50ETB for 50 trucks investment operation. Therefore base on the above information the payback period is determined to be 7.38 years. It can be concluded that the investment is feasible as the payback period is less than the loan period which is 10 years.