Freight transport

In 2010, total amount of goods moved was 70.89 billion tons-kilometers (4.7 billion vehicle-km) with 95% of them by road, less than 1% by train and remaining portion through pipelines. The conventional fossil fuel technology dominates the fuel supply. Domestic freight was principally 60% by train in the pre 1960s but declined after 1960s with road sector progressively leading with higher share. The train sub-sector had the highest last in 1980 with a capacity of about 1400 million ton-km then it declined to at 77 million ton-km. In the future, the freight levels will depend on balance between heavy good vehicles on the road and the rail network. With inland waterways linked to about 20 states in the Federation, water transport will be competing for its own share.

Level 1

This level assumes growth of production of goods and services and transportation. The freight activities are expected to grow 9 folds and modal share between road, rail and pipeline assume to remain the same as of 2010.

Level 2

Level 2 assumes that by 2050, a reduction in freight movement by road to 75% while the rail system is picking up taking 10% of the share. The waterways in Nigeria is also assumes to be dredged from the South to the North opening up for freight movement and should have a share of 2%, while pipeline increases to 13%. This level assumes a 20% increase in efficiency of freight activities over level 1.

Level 3

Level 3 assumes that by 2050, the freight shift from road to rail, water and pipeline continues to grow. The modal shift is motivated by the need to reduce traffic volume on the road. The gas pipeline network expansion programme continues to grow reducing the need for trucks for petrol and gas distribution. The level assumes 40% decrease in freight below the level 1, with increase in shares of rail, pipeline and Berge, 17%, 15% and 3% respectively, thereby reducing the share of road to 65%

Level 4

Level 4 assumes that by 2050, the share of road will reduce to 50% with heavy goods vehicle (HGV) using natural gas contributing about 15%, electric trucks 1% and diesel trucks 84%. The rail, berge and the pipeline shares will increase significant by 25%, 5% and 20% respectively. Split in rail will be 40% diesel and 60% electric trains. This level assumes a further reduction of 60% freight movement compared to level 1.

Interaction

A shift to low carbon technology will be needed to reduce the effect of the growth on the environment. Rail is twelve times more efficient than trucks and almost twice as efficient as ships. Therefore, modal shifts and alternative fuels will be useful for low carbon development

Goods transported from port to warehouse in Lagos.