3.1 KEY ELEMENTS OF THE PROGRAM

3.1.1 Priorities for the Program

The proposed Action Program for Infrastructure for the decade ahead is comprehensive and ambitious. It aims to rehabilitate and upgrade the bulk of the basic infrastructure assets of the country in the coming decade and reinforce the existing integration of Zimbabwe’s infrastructure network with the other countries of the Southern Africa region.

The key features of the proposed program for 2011-2020 are as follows:

- Full rehabilitation of the national power grid and by 2020 addition of new generation capacity required to sustain strong economic growth;
- Rehabilitation of a large part of the national road network;
- Rehabilitation of the railways network and restructuring of the industry through the creation of a new public entity that would own, maintain, and manage the basic track infrastructure, the restructuring of the National Railways of Zimbabwe (NRZ) into a privatized railway services company and the award of concessions for freight and passenger services on the entire rail network;
- Early action to upgrade the status of air traffic communications and safety in Zimbabwe to a standard consistent with the requirements of the ICAO, the award of concessions for the upgrade and operation of the Victoria Falls and Buffalo Range airports to promote the growth of tourism, and the rehabilitation and upgrade of the remaining nine airports that would continue to be managed by the Civil Aviation Authority of Zimbabwe (CAAZ);
- Substantial investment in storage and transport of water resources to meet increased demand from agriculture, industry and households;
- Rehabilitation of the existing water supply and sanitation infrastructure and improvement of services in urban and rural areas to ensure that the MDG goals for the sector are met no later than 2020;
- Development of a national communications grid for ICT based on a fiber optic network linked to the submarine cables now in place along the eastern seaboard of Africa. The grid would lay the foundations for a major expansion in access to reliable communications at reasonable cost for a majority of Zimbabweans, the business community, government and civil society;
- A substantial program of institutional reform and strengthening that includes measures to streamline the regulation of basic infrastructure services, promote private investment in infrastructure assets and services, as well as training and other capacity building measures to expand the skills required within the public sector for continued effective oversight and management of the basic infrastructure of the country.

3.1.2 Program Expenditures and Funding Development expenditures

Table 3.1 provides a summary of the costs of the proposed infrastructure program during the decade ahead for capacity building and technical support, rehabilitation of existing infrastructure networks, and increases in network capacity. The total cost is put at about $14.2 billion at 2009 constant prices, including $4.6 billion of private investment in upgrade of existing infrastructure and new capacity. The water resource management, including water storage and transport, would require outlays of $2.2 billion for capital works and related technical support. Rehabilitation and expansion of the water and sanitation service network would require outlays of about $2 billion. The power program would require about $4.3 billion, including $2.1 billion of
private investment in new generation capacity. The transport sector would require a total of $5.6 billion, including $970 million of private investment in railway and civil aviation concessions. The communications sector would require about $116 million, primarily to the creation of a national fiber optic backbone network. Not included in these estimates is about $400 million for completion of the rehabilitation program for the tertiary road network in 2021-25.

The bulk of the public expenditures of about $9.6 billion are intended for capital outlays on rehabilitation of the existing infrastructure network. A total of about $260 million is included for a wide ranging program of institutional and human capacity building and various technical studies and support, especially in relation to the proposed private investments in new capacity for power generation, railways, and airport services.

### Table 3.1: Zimbabwe: Development Expenditures for Proposed Infrastructure Program (In US$ millions at 2009 constant prices)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public development expenditures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water resources management</td>
<td>...</td>
<td>22.0</td>
<td>102.5</td>
<td>98.7</td>
<td>822.9</td>
</tr>
<tr>
<td>Water supply and sanitation</td>
<td>68.6</td>
<td>215.1</td>
<td>137.9</td>
<td>134.0</td>
<td>1920.3</td>
</tr>
<tr>
<td>Power</td>
<td>...</td>
<td>443.5</td>
<td>150.1</td>
<td>154.6</td>
<td>2252.9</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td>165.8</td>
<td>223.7</td>
<td>386.2</td>
<td>409.0</td>
<td>3626.6</td>
</tr>
<tr>
<td>Railways</td>
<td>41.7</td>
<td>98.0</td>
<td>75.5</td>
<td>75.3</td>
<td>887.5</td>
</tr>
<tr>
<td>Civil aviation</td>
<td>...</td>
<td>30.9</td>
<td>0.3</td>
<td>...</td>
<td>72.4</td>
</tr>
<tr>
<td>Sub-total</td>
<td>207.6</td>
<td>352.6</td>
<td>461.9</td>
<td>484.2</td>
<td>4586.5</td>
</tr>
<tr>
<td>Communications</td>
<td>...</td>
<td>3.5</td>
<td>5.4</td>
<td>0.5</td>
<td>39.0</td>
</tr>
<tr>
<td>Total</td>
<td>276.2</td>
<td>1036.7</td>
<td>857.8</td>
<td>872.0</td>
<td>9621.6</td>
</tr>
<tr>
<td><strong>Associated private investment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water resources management</td>
<td>...</td>
<td>...</td>
<td>60.0</td>
<td>30.0</td>
<td>1375.0</td>
</tr>
<tr>
<td>Water supply and sanitation</td>
<td>...</td>
<td>...</td>
<td>10.0</td>
<td>20.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Power</td>
<td>...</td>
<td>...</td>
<td>453.2</td>
<td>...</td>
<td>2076.0</td>
</tr>
<tr>
<td>Railways</td>
<td>...</td>
<td>...</td>
<td>165.0</td>
<td>25.0</td>
<td>740.0</td>
</tr>
<tr>
<td>Civil aviation</td>
<td>...</td>
<td>...</td>
<td>86.0</td>
<td>...</td>
<td>226.0</td>
</tr>
<tr>
<td>Communications</td>
<td>...</td>
<td>...</td>
<td>6.1</td>
<td>...</td>
<td>43.4</td>
</tr>
<tr>
<td>Total</td>
<td>...</td>
<td>...</td>
<td>780.3</td>
<td>75.0</td>
<td>4560.4</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td>276.2</td>
<td>1036.7</td>
<td>1638.1</td>
<td>947.0</td>
<td>14182.0</td>
</tr>
</tbody>
</table>

Source: Annex Table 2.1.

Successful implementation of the proposed program will bring a range of benefits to Zimbabwe, including improved transport services and lower costs for the movement of cargo domestically and internationally, reliable supplies of electricity, improved access to low cost communications networks, and improved access to safe water and improved sanitation in both urban and rural areas. Indirect benefits include an improved environment for tourism and business activity in general. A high proportion of these expenditures will be for civil works that includes the supply of materials and provision of construction-related services. The proposed program is therefore expected to provide an important stimulus for economic growth in Zimbabwe in the decade ahead.

**Funding arrangements for development expenditures.** Table 3.2 provides a summary of the funding arrangements proposed for the program. The state enterprises involved with service provision in these sectors and new private investment would account for $7.1 billion of the total requirement of $14.2 billion. The national government and local...
authorities would account for a further $4.3 billion, with donors providing the balance of about $2.8 billion. For the program as a whole, the national and local governments would fund about 30 percent of the program, state enterprises would fund about 18 percent, and private investment would account for about 32 percent of the total requirements. The donor community would provide the remaining 20 percent. This level of donor support would require average annual commitments of about $275 million a year for the decade ahead. Assuming an arrears clearance process is initiated in the near future, and full donor support is restored, the proposed infrastructure program would require an allocation of about 40 percent of donor funding for infrastructure programs. The bulk of the donor funds would be allocated to water, power, and roads.

Two important issues emerge from this funding proposal. First, a substantial part of the cost of rehabilitating the national road network stems from secondary and tertiary roads that are the responsibility of local authorities. The amounts required for rehabilitation of these networks are almost certainly well beyond the financing capacities of these local authorities. If the rehabilitation is to go forward, it is likely that the national government budget would have to make provision for transfers to these local authorities for road rehabilitation. Second, the state enterprises are called upon to provide about $2.5 billion of funding, $1.4 billion of which is for the power sector. Moreover, these state enterprises would be partners with private investors in power generation and in airport and railway concessions. If these large investments are to go forward, it will be essential to undertake financial restructuring of the state enterprises concerned before serious negotiations with potential private investors can be successfully concluded.

### Table 3.2: Zimbabwe: Funding Arrangements for Proposed Infrastructure Program (In US$ millions at 2009 constant prices)

<table>
<thead>
<tr>
<th>Sector</th>
<th>National budget</th>
<th>State enterprises</th>
<th>Local authorities</th>
<th>Donors</th>
<th>Private</th>
<th>Total</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water resources management</td>
<td>308.4</td>
<td>265.0</td>
<td>...</td>
<td>249.5</td>
<td>1375.0</td>
<td>2197.9</td>
<td>15.5</td>
</tr>
<tr>
<td>Water supply and sanitation</td>
<td>742.3</td>
<td>40.0</td>
<td>100.0</td>
<td>1038.0</td>
<td>100.0</td>
<td>2020.3</td>
<td>14.2</td>
</tr>
<tr>
<td>Power</td>
<td>...</td>
<td>1376.7</td>
<td>...</td>
<td>876.2</td>
<td>2076.0</td>
<td>4328.9</td>
<td>30.5</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td>599.8</td>
<td>...</td>
<td>2552.0</td>
<td>474.8</td>
<td>...</td>
<td>3626.6</td>
<td>25.6</td>
</tr>
<tr>
<td>Railways</td>
<td>...</td>
<td>778.5</td>
<td>...</td>
<td>109.0</td>
<td>740.0</td>
<td>1627.5</td>
<td>11.5</td>
</tr>
<tr>
<td>Civil aviation</td>
<td>...</td>
<td>71.4</td>
<td>...</td>
<td>1.0</td>
<td>226.0</td>
<td>298.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Sub-total</td>
<td>599.8</td>
<td>849.9</td>
<td>2552.0</td>
<td>584.8</td>
<td>966.0</td>
<td>5552.5</td>
<td>39.2</td>
</tr>
<tr>
<td>Communications</td>
<td>36.0</td>
<td>...</td>
<td>...</td>
<td>3.0</td>
<td>43.4</td>
<td>82.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Total</td>
<td>1686.5</td>
<td>2531.6</td>
<td>2652.0</td>
<td>2751.5</td>
<td>4560.4</td>
<td>14182.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Share (%)</td>
<td>11.9</td>
<td>17.9</td>
<td>18.7</td>
<td>19.4</td>
<td>32.2</td>
<td>100.0</td>
<td>...</td>
</tr>
</tbody>
</table>

Source: Annex Table 2.4.

**Increased emphasis on routine maintenance.**

A key part of the proposed Action Plan includes concerted efforts to strengthen funding provisions in the public sector for routine maintenance of infrastructure assets already in good condition and those that are being rehabilitated in the decade ahead. Failure to increase maintenance budgets will repeat the cycle of the past decade. As Annex Table 2.3 indicates, the current value of infrastructure assets in the public sector is estimated at about $13 billion at historical cost. The value of public assets in 2020 is estimated at about $20 billion after allowing for new capacity
and rehabilitation of currently degraded assets. New infrastructure capacity as a result of private investment in power, railways, airports, and communications is projected to be about $4.6 billion by 2020. (All valuations are at 2009 constant prices.)

**Figure 3.1: Zimbabwe: Routine Maintenance Expenditures for Infrastructure**

*In US$ millions at 2009 constant prices*

Total public expenditures on routine maintenance of infrastructure assets are estimated at about $330 million for 2010, equivalent to about 2.5 percent of the historical cost of assets. The proposed Action Plan calls for a steady increase in public sector allocations for routine maintenance to almost $700 million a year by 2020, equivalent to about 3.4 percent of public sector asset values at that time. Maintenance spending by the private sector on newly created assets in the decade ahead would rise to about $220 million by 2020.

As the subsequent analysis indicates, with total maintenance expenditures projected to rise to about $910 million a year by 2020, the public and private sectors are each likely to contract out a large part of these maintenance services. Such contracting will present very substantial opportunities for the development of domestic trade services that can respond to the large increase in this type of business activity.

### 3.2 HIGHLIGHTS OF THE SECTORAL PROGRAMS

#### 3.2.1 Water Supply and Sanitation

The Action Plan for water resource management and delivery of water and sanitation services has four main components: (i) a major program to support the storage and transport of water
resources to meet current and future demand; (ii) rehabilitation and expansion of the water supply and sanitation network of the country; (iii) formation of an independent regulatory authority for water resource management, and provision of water and sanitation services; and (iv) a substantial institutional reform and capacity building to strengthen service delivery capacities throughout the sector.

Storage and transport of water resources. The emphasis at this stage is on strengthening capacities for water resources management and the further development of the country’s water resources to meet existing and future demand and reduce Zimbabwe’s vulnerability to hydrological and climatic vulnerability. Full rehabilitation and development of the basic infrastructure for water storage and transport will take much of the decade ahead to complete. Once the basic infrastructure is in place, the emphasis would then shift to management of these resources and facilities. The key elements of the proposed program are as follows:

- A program of analytical studies, technical support, and capacity building for institutions with responsibilities for water resource management;
- An inspection program for all of the major dams in the country to assess risks to public safety, extent of water losses, and extent of siltation;
- A rehabilitation program to remedy deficiencies in existing water storage and transport infrastructure. This component of the program would include rehabilitation of existing dams, water transport facilities such as canals and pipelines, and treatment plants;
- Drilling and hydrological investigations and expansion of hydrological stations to provide basic information for improved management of national water resources;
- Expand the availability of raw water with completion of dams whose construction was discontinued in the past decade because of funding shortages, new dams and water transport facilities, and new treatment plants;
- Increased commercialization of ZINWA operations to ensure full recovery of the costs of supplying raw and treated water for agricultural, household and industrial use.

As noted in Table 3.1, the total cost of this program is put at $2.2 billion for the decade as a whole. About $820 million of the program would be funded from the national budget, ZINWA and international donors. Private investment in the range of $1.38 billion is proposed for new investment in dams and water transport facilities under PPP arrangements with ZINWA.

Water supply services. The proposed Action Plan for provision of water services has three key objectives: (i) to complete the rehabilitation of the existing urban and rural networks within the next four years; (ii) to expand access to improved water in urban and rural areas and meet the MDG targets by 2020, or sooner if the required funding is available; and (iii) to implement a range of institutional and commercial measures that strengthen implementation capacities within the sector and improve the financial performance of the entities responsible for the delivery of water services. Table 3.3 sets out key indicators for the water services program. The capital cost of the proposed program for water distribution is estimated at about $860 million (at 2009 constant prices), including $325 million for rehabilitation of existing facilities. The bulk of the funding for the program would come from the national government, international donors, and municipalities that are service providers. Modest provision is also made for the entry of private sector suppliers of water services.

Sanitation services. The proposed Action Plan for sanitation has four key objectives: (i) to complete the rehabilitation of the existing urban and rural network of sanitation facilities within the next four years; (ii) to expand access to improved sanitation facilities
in both urban and rural areas, with particular attention to reducing open defecation in rural areas; (iii) to implement institutional reforms that will strengthen coordination and implementation of sanitation programs and will expand financial support for the program; and (iv) to expand the on-going hygiene education programs for urban and rural communities. The capital cost of the sanitation program is estimated at about $980 million (at 2009 constant prices), including about $440 million for rehabilitation of existing urban and rural facilities, including rural latrines. The bulk of the funding for these capital expenditures would come from the national budget and the donor community, with modest contributions by the municipalities responsible for service provision.

3.2.2 Electric Power

The proposed Action Plan for the electric power sector has three key objectives: (i) complete the rehabilitation of the generation, transmission and distribution network within the next four years; (ii) to meet existing and projected future demand for power, make substantial new investments in generation capacity and expand the capacity of the transmission and distribution network; (iii) implement a program for demand side management to ensure more efficient use of power supplies among consumers; (iv) improve the financial performance and commercial orientation of the power utilities with adjustments in pricing policies that ensure that the cost of power supply is fully recovered from consumers; (v) complete a major financial restructuring in the power generation utility (ZPC) to lay the foundations for privatization of the utility; (vi) implement a comprehensive program of financial restructuring for the transmission and distribution utility (ZETDC) to ensure that it has the capacity to enter into power purchase agreements with private suppliers of electricity under take-or-pay contracts; in addition to the privatization of ZPC (vii) attract additional international investors to operate as Independent Power Producers (IPPs) within Zimbabwe; (viii) strengthen the enabling environment for private investment in the power sector; and (ix) strengthen the existing regulatory arrangements for the electric power sector as part of the ongoing preparation of a new regulatory agency for the entire energy sector in Zimbabwe.
Table 3.4 provides a summary of selected performance indicators for the power sector for the decade ahead. As indicated in Table 3.1 the total cost of the proposed power program is $4.33 billion, which includes $2.1 billion of private investment in generation and other facilities. It includes $450 million for rehabilitation of existing generation facilities, about $2 billion for new generation capacity to meet existing and future demand, about $1.77 billion for upgrade and expansion of the transmission and distribution network and for demand side management, and about $160 million for capacity building to enhance the financial and technical performance of utilities, complete technical studies, and fund transaction advisors teams needed for the proposed privatization of ZPC and the proposed move to use of IPPs for power supply in Zimbabwe.

### Table 3.4: Selected Indicators for Electric Power in Decade Ahead

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2009</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>Growth rate 2010-20 (% p.a)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generation (MW)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installed capacity</td>
<td>1920.0</td>
<td>1920.0</td>
<td>2220.0</td>
<td>4220.0</td>
<td>8.2</td>
</tr>
<tr>
<td>Available capacity</td>
<td>1100.0</td>
<td>1100.0</td>
<td>1600.0</td>
<td>3600.0</td>
<td>12.6</td>
</tr>
<tr>
<td>Capacity utilization (%)</td>
<td>57.3</td>
<td>57.3</td>
<td>72.1</td>
<td>85.3</td>
<td>...</td>
</tr>
<tr>
<td><strong>Supply (GWh)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td>7165.0</td>
<td>6105.1</td>
<td>10602.5</td>
<td>23085.4</td>
<td>14.2</td>
</tr>
<tr>
<td>Imports</td>
<td>2164.0</td>
<td>1182.6</td>
<td>3013.4</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Less: exports</td>
<td>-999.4</td>
<td>-1100.0</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Total</td>
<td>8329.6</td>
<td>6187.7</td>
<td>13615.9</td>
<td>23085.4</td>
<td>14.1</td>
</tr>
<tr>
<td>Technical losses</td>
<td>1112.0</td>
<td>801.6</td>
<td>1497.7</td>
<td>2539.4</td>
<td>12.2</td>
</tr>
<tr>
<td>Non-technical losses</td>
<td>577.0</td>
<td>371.3</td>
<td>272.3</td>
<td>230.9</td>
<td>-4.6</td>
</tr>
<tr>
<td>Consumption</td>
<td>6640.6</td>
<td>5014.8</td>
<td>11845.8</td>
<td>20315.2</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>Household electrification (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>81.0</td>
<td>80.4</td>
<td>87.6</td>
<td>97.3</td>
<td>1.9</td>
</tr>
<tr>
<td>Rural</td>
<td>9.8</td>
<td>10.0</td>
<td>12.0</td>
<td>14.6</td>
<td>3.9</td>
</tr>
<tr>
<td>National</td>
<td>36.6</td>
<td>36.5</td>
<td>41.1</td>
<td>47.4</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Memo items:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical losses (% of supply)</td>
<td>13.3</td>
<td>13.0</td>
<td>11.0</td>
<td>11.0</td>
<td>...</td>
</tr>
<tr>
<td>Non technical losses</td>
<td>6.9</td>
<td>6.0</td>
<td>2.0</td>
<td>1.0</td>
<td>...</td>
</tr>
<tr>
<td>Consumption per capita (kWh)</td>
<td>530.3</td>
<td>396.6</td>
<td>844.4</td>
<td>1304.7</td>
<td>12.6</td>
</tr>
<tr>
<td>Population ('000)</td>
<td>12523.0</td>
<td>12644.0</td>
<td>14029.0</td>
<td>15571.0</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Source: Chapter 8, Annex Table 1.1 and Annex 4

### 3.2.3 Transport Sector

**Rehabilitation of the road network.** The key objective of the very large rehabilitation program for the transport network is to improve service levels for business and communities throughout the country by improving access to transport and lowering its current high cost. The Action Plan is based on the assumption that the rehabilitation of the rail network, airports, and the primary and secondary road network would be fully rehabilitated over the next ten years (2011-20); but that full rehabilitation of the tertiary road network would not be completed until 2025. The full rehabilitation of the road, rail, and aviation infrastructure will require capital outlays in the range of $4.3 billion at 2009 constant prices. Given the magnitude of these requirements relative to the GDP of the country and its financing...
capacities, it is proposed that the rehabilitation of the road network is implemented over a 15-year period, 2011-25. Given the overall cost of rehabilitation, clear priorities will need to be established for the rehabilitation program, especially for the tertiary roads of some 63 thousand kilometers, or about 70 percent of the entire network. Priority will need to be given to those parts of the tertiary network that are most important for access to markets and services by rural communities and rural business activities.

**Figure 3.2. Zimbabwe: Selected Indicators for Transport Performance, 2010-20**

![Graph showing selected indicators for transport performance, 2010-20](image)

**Action plan for road transport.** The road transport chapter proposes a six point program for recovery and reform in the road sector: (i) rehabilitation of the primary, secondary and urban road network over the ten year period, 2011-20, and rehabilitation of the tertiary network over a 15 year period, 2011-2025; (ii) expansion of network capacities in critical areas, (iii) strengthening of financial and institutional capacities for regular maintenance of the network and for oversight of the road transport industry, (iv) implementation of reforms in the roads sector to align Zimbabwe more closely with the requirements of the SADC Protocol on Transport, Communications and Meteorology, to which Zimbabwe is a signatory, (v) development of urban transport services, and (vi) implementation of a comprehensive program for road safety. Rehabilitation of the network is estimated to cost about $2.7 billion, while clearing the backlog of periodic maintenance will cost about $560 million (both at 2009 constant prices). The cost of routine maintenance of the portion of the network currently in good condition is estimated at $90 million, but in 2009 the total spending on routine maintenance was less than $15 million. By 2020, the cost of routine maintenance is estimated to be in
the range of $280 million a year (at 2009 constant prices). The mobilization of funding for these programs will be a major challenge. The proposed Action Plan sets out a number of funding proposals for cost recovery for road users.

**Rehabilitation and restructuring in the railways sector.** There has been substantial deterioration in the railway network of Zimbabwe in the past decade. The problems with the infrastructure stem from aging track, including insufficient ballast, rail wear, deteriorating earthworks, and rail signaling and communications with obsolete equipment and lack of spare parts. Rolling stock suffers from low availability and utilization and, as a result, the railway is not able to meet current demand for freight services. The cost of rehabilitating the infrastructure network is estimated at about $1.14 billion at 2009 constant prices, which is high in relation to existing traffic volumes and revenues. The cost of upgrading and replacing the rolling stock is estimated at $870 million at 2009 constant prices. A fundamental question for the Zimbabwe railways is whether the rehabilitation can be funded and whether such funding arrangements are sustainable. The position taken in this Report is that one or more private concessions could make a substantial contribution to rebuilding rail services in Zimbabwe. The Report sets out a proposed program for the rehabilitation of railway infrastructure and assets that is built on the assumption that freight and passenger services on the entire public network of 2,760 km would be operated by one or more private concessions. The Government would, however, retain ownership of the rail infrastructure. The NRZ would be restructured to reflect the shift to concession-based services on the main rail routes of the country. The restructuring of NRZ would result in the formation of two new companies: (i) the Railway Infrastructure Company of Zimbabwe (RICZ), a state owned company that would own the track and related infrastructure and would be responsible for its operation and maintenance; and (ii) the Zimbabwe Railway Services Company (ZRSC) which would be a private company that would operate as a freight and passenger service concessionaire on the entire public rail network. Concessionaires would pay maintenance and concession fees to RICZ for the maintenance and operation of the network.

**A program for civil aviation.** The civil aviation of Zimbabwe has been severely affected by the economic decline of the past decade, as the number of passengers declined from a peak of 2.6 million in 1997 to a low of 846,000 in 2009. One consequence of this decline has been deterioration in the financial position of the CAAZ, essentially the only source of funding for the upkeep of aviation facilities in Zimbabwe. As a result, the ability of Zimbabwe to meet international air safety and communication requirements has been eroded and rehabilitation of airport facilities has been postponed. A four-pronged approach to rebuilding the civil aviation industry is proposed in this Report. First, a high priority is assigned to expenditures on air safety and communication equipment to lay foundations for an early reclassification of Zimbabwe to a Category 1 country with good aviation oversight. Second, given the financial difficulties of CAAZ, the award of private concessions is proposed for the rehabilitation and upgrade of the Victoria Falls and Buffalo Range International Airports, both of which are expected to play a major role in rebuilding the tourism trade for Zimbabwe. The cost of upgrading these two facilities is put at about $230 million (at 2009 constant prices). Under the proposed contract, the concessionaire would be responsible for mobilizing the funding required for the rehabilitation and upgrade of these airports. Third, with the creation in 2012 of the proposed independent regulatory
authority for the transport sector as a whole the CAAZ would then be restructured into the Airport Services Company of Zimbabwe (ASCZ) and would be responsible for the operation of the nine domestic airports not subject to concession arrangements. Fourth, Air Zimbabwe would intensify its search for an international investment partner that could contribute to the modernization of its fleet and to the provision of competitive regional and international services.

3.2.4 Information and Communications Technology

The proposed ICT program has six key objectives: (i) expand access to the global communication network of submarine cables with a national broadband network of fibre optic cable; (ii) improve and expand access to communications throughout Zimbabwe, including rural communities; (iii) promote competition among service providers to ensure that the costs of service delivery are reduced; (iv) privatize the two state-owned service providers, Net*One and Tel*One; (v) consolidate arrangements for regulation and oversight of the industry; and (vi) expand the range of e-applications that are available. Key elements of the proposed program include the following:

- Open the domestic market to increased competition by removing limits on the numbers of network licenses, encouraging entry of additional service providers, and removing restrictions to allow operators to buy backbone services from and sell services to other operators. These moves will help consolidate traffic and provide incentives to upgrade networks to fiber optic cable and thereby reduce communications costs and improve service quality.

- Set clear targets for universal access to the communications network, including access for communities that are disadvantaged or isolated. A number of options for implementing this policy are set out in Chapter 12, along with the pros and cons of each approach and the arrangements for meeting the cost of universal access.

- Consolidate the existing duplication of regulatory and oversight responsibilities shared by the Broadcasting Authority of Zimbabwe (BAZ), and the Postal and Communications Authority (POTRAZ) by creating a single regulatory authority for the ICT sector. With appropriate use of technical services and support, amend and strengthen the regulatory framework, amend licensing rules and their enforcement, and improve information collection and evaluation by the integrated single regulatory authority.

- Government and non-government entities would collaborate to broaden the range of e-applications that are currently available throughout the country. The program would expand the existing range of e-government applications, and promote development of additional applications for the business community, for health, education and other institutions, and for the population at large.

- Expand the number of landing platforms for access to the international submarine network from two at present (Botswana and Zambia) to at least six with links to South Africa, Mozambique, Malawi, Namibia, and a second link with Zambia.

- Complete the construction of a domestic backbone fiber optic network of some 5,280 km by 2015, thereby laying the basis for rapid expansion within the country to access to low cost communications with regional partners and with the international community.

- Set clear targets for universal access to the communications network, including access for communities that are disadvantaged or isolated. A number of options for implementing this policy are set out in Chapter 12, along with the pros and cons of each approach and the arrangements for meeting the cost of universal access.

- Consolidate the existing duplication of regulatory and oversight responsibilities shared by the Broadcasting Authority of Zimbabwe (BAZ), and the Postal and Communications Authority (POTRAZ) by creating a single regulatory authority for the ICT sector. With appropriate use of technical services and support, amend and strengthen the regulatory framework, amend licensing rules and their enforcement, and improve information collection and evaluation by the integrated single regulatory authority.

- Government and non-government entities would collaborate to broaden the range of e-applications that are currently available throughout the country. The program would expand the existing range of e-government applications, and promote development of additional applications for the business community, for health, education and other institutions, and for the population at large.
Figure 3.3 sets out plausible targets for levels of access by 2020 if the proposed program is successfully implemented. Almost two-thirds of the population would have access to voice communications by 2020, compared with about one-third at the present time. This growth is in line with the projected increase in the electrification rate for the country as a whole by 2020. The penetration rate for mobile phone use of 57 accounts per 100 people in 2020 would put Zimbabwe at a level roughly comparable with the current rate for middle income countries around the world. The penetration rate for fixed line accounts, on the other hand, would be low relative to current rates for middle income countries in other regions of the world. Access to internet and broadband services in 2020 would be comparable to current penetration rates for other middle income countries. Achievement of these targets would transform access to media and communications throughout Zimbabwe, especially when accompanied by increased competition among service providers and lower overall costs for access to these internet and broadband services. The effects would be profound since it would lay the foundations for widespread access to information in urban and rural areas, including education and health services in schools and community centers in rural communities, and improved access to information about market opportunities for farm products and other rural-based production activities.

3.3 IMPROVEMENTS IN THE OPERATING ENVIRONMENT

3.3.1 Overview

As Chapter 2 indicates, analytical studies support the view that there is a strong link between the improvement in infrastructure services and economic growth. However, a strategy that focuses only on rehabilitation and maintenance of the basic infrastructure of Zimbabwe is unlikely to be sufficient for a transition to sustained strong economic growth. An important finding that emerges from the detailed analysis undertaken for this Report is that there is a clear need to improve the operating environment for provision of infrastructure services if the proposed $4.6 billion of private investment required for new capacity in power generation and for upgrade and new capacity in rail services and airport management is to be mobilized. In particular, there are three closely related sets of concerns that will require early attention. These are:

- Strengthening the policy framework for private investment in infrastructure

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services under partnership arrangements of one kind or another with government entities;

- Technical and financial restructuring, including privatization, of state enterprises that are likely to enter into partnerships with potential equity investors, or that will need to go to the financial markets for long-term funding for infrastructure projects;

- Strengthen the legal, regulatory, and administrative environment applicable to the provision of infrastructure services.

The position taken in this Report is that the above-three issues will need to be acted upon prior to the completion of negotiations with potential private investors in PPP-type arrangements that will be required for the proposed infrastructure program.

3.3.2 Private Investment and Public-Private Partnerships

At the present time in Zimbabwe, the private sector is most active in providing road transport services and communications. A substantial part of the road transport services are provided by domestically owned entities, but because of its central position in the regional road network, service providers from other countries — especially South Africa — are also important. The bulk of the airlines services are provided by international carriers from other countries. Service provision in the power sector is dominated by government-owned parastatals, as is the case for railway services. In the case of water and sanitation, involvement by the private sector is very limited as most service provision is provided by municipalities and other local authorities.

There were a number of initiatives in Zimbabwe in the 1990s aimed at expanding the role of the private sector in the provision of infrastructure services, but these were largely inconclusive. The most prominent example of
the use of PPP-type arrangements from that period was the private concession that began providing rail services in 1998 on 385 km of track between Bulawayo and Beitbridge (BBR). On the policy front, the “Public-Private Partnerships Policy and Guidelines,” published in 2004, presents the Government’s approach to collaboration with the private sector for infrastructure provision. However, this policy statement and guidelines have not been translated into a legal and regulatory framework for PPP-type arrangements. After a long lapse, the Government has renewed its interest in expanding the role of private sector provision of transport services, development, and ownership of transport infrastructure. A key objective is to mobilize private sector funding to compensate for the severe constraints on the availability of public funding for the rehabilitation of the infrastructure network and for the large backlog of required periodic maintenance.

The bulk of the private funding to be mobilized under PPP-type arrangements will be in four sectors: water storage and transport, power generation, concessions for railways, and concessions for airport services.

- As noted elsewhere, this Report proposes new private investment of $1.375 billion for the storage and transport of water, the most important component of which is the proposed 400 km pipeline from the Zambezi River to Bulawayo that is estimated to cost $1.2 billion. Successful implementation of PPP arrangements for the water sector will require close attention to take-or-pay arrangements that will be attractive to potential private investor;

- In the case of the power sector, about $2 billion will be required for new generation capacity in the decade ahead. The proposal seeks to have private investors develop the not insignificant domestic energy resources to meet these future generation requirements. This would be done under a PPP arrangement in which private investors would build and operate individual generation plants and sell power to the national grid under take-or-pay contract arrangements with the ZETDC. As part of the proposed program, the ZPC would be privatized and with a possible international partner it would also enter into a IPP arrangements with ZETA;

- In the case of the railways sector, the program calls for the long-term contracts with concessionaires to provide passenger and freight services on the mainline public rail network and, subject to further analysis, on some or all of the spur lines. As noted earlier, the proposed new parastatal, RICZ, would be responsible for the operation and maintenance of the public network, while the concessionaires would be responsible for the provision of freight and passenger services and would own the rolling stock required for these services;

- In civil aviation, CAAZ would transfer its existing responsibilities for regulation of the aviation industry to a newly created regulatory authority for the transport sector (see discussion below). CAAZ would continue to be responsible for the rehabilitation and maintenance of facilities at nine of the eleven airports that it currently operates. Concessionaires would be contracted to operate the remaining two airports (the Victoria Falls and Buffalo Range International Airports).

Mobilization of some $4.6 billion of investment from private sources will be a major challenge for two reasons. First, there is no clear legal and regulatory framework in place for these types of investments; and second, partnerships with the government in water storage and transport, power, civil aviation, and railways — the main areas where private investment is to be mobilized — will involve dealings with the parastatals that currently own these types of infrastructure assets and, with the exception of the BBR concession, have monopoly arrangements with respect to service provision. As the consideration below indicates, the current financial position of these parastatals...
is unsatisfactory. In their present financial condition, it is unlikely that they could form successful partnerships with private investors. From the perspective of potential private investors, the combination of the unsuitable legal framework, uncertainty about the regulatory environment, and the weak financial position of the public partners translate into a high degree of risk and uncertainty about the attractiveness of these PPP opportunities. This Report therefore calls for the early launch of a comprehensive program that addresses these concerns.

3.3.3 Restructuring of State Enterprises

In addition to the role of regulatory agencies, POTRAZ, BAS, and ZERC, nine state enterprises play important roles in the provision of infrastructure services in Zimbabwe. These are the NRZ, CAAZ, Air Zimbabwe, ZESA Holdings, ZPC, ZETDC, Tel*One, Net*One and ZINWA, most of whom have been identified as candidates for restructuring. If there is to be sustained progress in rehabilitating and rebuilding the infrastructure assets and services of the country, there is a clear need for early action on the financial and technical restructuring of these enterprises. Potential private investors in water storage and transport, power generation, railways, and airport concessions will require financially sound public partners for the types of PPP arrangements currently envisaged by the Government. As the analysis in Chapter 5 indicates, the restructuring process will have to be undertaken on a case-by-case basis, with close attention given to the full range of stakeholder interests, including, for example, the manner in which staff redundancies will be managed. Long delays in restructuring the SOEs that are potential partners with private investors in PPP-type arrangements will simply delay efforts to upgrade and increase capacities in key infrastructure areas such as power generation, railway services, and airport capacities and services at key tourist destinations in Zimbabwe.

The proposed action plan for state enterprise restructuring set forth in this Report for each infrastructure sector is as follows:

- **Water supply.** A key objective is to enable ZINWA to construct and rehabilitate water infrastructure, with particular emphasis on the network of dams throughout the country, and to provide water supplies consistent with specific quality standards. The proposed restructuring for ZINWA would involve the recapitalization of the company and separation of its current responsibilities for regulation to an independent regulatory authority for water and sanitation;

- **Electric power.** In the case of ZPC, the proposal is to privatize the company by private sale of government shares to a strategic partner or joint venture that has an interest and capacity to undertake further investments in power generation under take-or-pay supply arrangements. In the case of the ZETDC, the company would remain as

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a state owned entity, but would undertake financial and technical restructuring that involved cleaning the balance sheet of the company through the transfer of specific debt obligations to a Special Purpose Vehicle to be established by the Government. ZESA Holdings would also undergo technical and financial restructuring along the same lines, with disposal of non-core assets to private investors;

- **Transport sector.** As noted earlier, the NRZ would be split into two separate companies: RICZ would be the owner and manager of the railway infrastructure, and ZRSC would be a privatized company that would provide passenger and freight services on the entire rail network of some 2,760 km in competition with other concessionaires. In the case of CAAZ, its current regulatory responsibilities would be transferred to a proposed new regulatory authority for the entire transport sector. The commercial arm of CAAZ would be subject to financial restructuring to strengthen its balance sheet and lay the foundations for the formation of concession arrangement for the management of the Victoria Falls and Buffalo Range International airports. The restructured CAAZ would aim to attract a strategic investment partner that would inject additional equity into the company. It would be responsible to the provision of airport services at the nine other airports currently managed by CAAZ. In the case of Air Zimbabwe, the proposal is modeled along the lines of the privatization of Kenya Airways in 1995-96. It would aim to bring in another international airline as a strategic investor, with the latter holding a substantial portion, but not necessarily a controlling interest in the company;

- **Telecommunications.** Both Net*One and Tel*One would be privatized by private sale of government shares to domestic and or international strategic investors that have an interest in expanding their role as service providers in the ICT sector.

Chapter 5 sets out a clear timetable for implementing these restructuring and privatization programs. The key point is that they all need to be completed within the next three years to lay the foundations for the proposed build up of private investment in new capacity and improved service provision by entities such as ZETDC and ZINWA that would remain as publically owned companies.

### 3.3.4 Strengthening the Institutional and Regulatory Environment

**Reconsideration of regulatory arrangements.** The Action Plan calls for important institutional changes in the regulation and oversight of infrastructure services. In the case of water and sanitation services, the proposed program for water supply in urban and rural areas includes a range of measures aimed at strengthening the policy environment and building institutional capacities for service delivery. There is an increasingly important need to strengthen regulatory arrangements for the sector. A strong case can be made for the creation of an independent regulator for oversight of water resource management and provision of water and sanitation services. The activities associated with an enhanced regulatory capacity would include, for example, assessment of current pricing and cost recovery arrangements in urban and rural areas and establishment of tariff guidelines and performance benchmarks for service providers. The latter would cover three broad areas: (i) service coverage and quality, including such things as quantities of water delivered on a per capita basis and responses to customer complaints; (ii) financial performance which would include preparation of audited accounts for urban suppliers, standard financial ratios, cost recovery, and collection of accounts receivable; and (iii) operational efficiency which would include standard measures such as the amount of non-revenue water used, staffing efficiency, and maintenance performance.

In the case of the power sector, the Government has already decided to create a
single regulatory authority for the entire energy sector. Work is underway on the preparation of legislation and regulations for this initiative. A review of existing regulatory arrangements for the power sector undertaken for this Report suggests that a number of enhancements should be considered. These proposed changes in arrangements for regulation of the power sector could then be included in the new law and regulations for the energy sector.

The changing role of the government in the transport sector, with increasing participation by the private sector, calls for early reconsideration of arrangements for regulation of transport services. In the case of the transport sector, the Report proposes the creation of a single regulatory authority for the entire sector, including roads, rail, civil aviation, and ports. Under the proposed strategy, the Government would retain ownership of the transport infrastructure and therefore would have the ultimate responsibility for its upkeep. The Action Plan calls for the creation of a separate regulatory authority that would be responsible for the entire transport industry, rather than separate authorities for road, rail, and aviation services. Creation of a single regulatory authority for the transport sector is not uncommon: for example, countries as diverse as Brazil, Argentina, Tanzania, and Singapore are served by authorities with broad sectoral responsibilities for regulation within the transport sector. Given that Zimbabwe has a single ministry responsible for all aspects of transportation, there is merit in having a comparable regulatory authority. This proposed new institution is referred to as the Transportation Regulatory Authority for Zimbabwe (TRAZ). New legislation would be required to create the proposed independent regulatory authority. Careful consideration of the degree of independence, autonomy, expertise, and accountability for the authority will be required; for example, international experience suggests that creation of a regulatory commission with three to five
members is preferable to the appointment of a single regulator. A more detailed discussion of the respective responsibilities of TRAZ for the road, rail and aviation industries is discussed in Chapter 4.

In the case of the ICT sector, a number of issues and concerns about the regulatory environment for ICT services have emerged in recent years and have become more pressing since the creation of the Ministry for Information and Communications Technology. First, the Ministry does not have formal oversight of the two regulatory bodies active in the sector. Second, no laws govern cyber transactions in the following areas: digital signatures; contracts made over the internet; a framework covering issues of convergence of telecommunications, broadcasting, and computing. The Minister for Information and Communications Technology has committed to enact laws that control and manage online transactions. Third, both POTRAZ and BAZ regulate ICT activities. There is overlap and duplication of functions between these agencies, and the fragmented nature of these arrangements impedes efficient development and harmonization of efforts. Both POTRAZ and BAZ manage radio frequencies and regulate electronic transmission of information and data. International trends recommend one national body to coordinate ICT related issues at national level, a situation that is in line with convergence of technologies. Wastage of both financial and human resources stems from the current overlap in responsibilities and duplication of effort results. The ICT Ministry and other stakeholders advocate the merger or convergence of BAZ into POTRAZ for better coordination of activities in the ICT Industry. Fourth, though there is some degree of infrastructure competition in the telecommunications sector, the creation of effective competition among backbone network operators is needed. This lack of competition is constraining investment in high-capacity networks and preventing the market from achieving economies of scale.

It also has a knock-on effect in the providers (ISP) and the data services market as a whole. Fifth, the existing framework does not address adequately the emerging regulatory issues that arise from impeding transition to a fiber optic backbone network for the country. With the rapid development of high capacity backbone networks in the Southern Africa region, Zimbabwe has the opportunity to improve substantially its communications services and lower the cost of these services. At the present time, the small amount of backbone network already established is used mainly to provide backbone services for the operator’s own retail customers, most of whom are mobile subscribers. Wholesale markets in backbone capacity do not exist in Zimbabwe at this time. Sixth, where fiber backbone network development has taken place in Zimbabwe, it has been concentrated in urban areas and on interurban routes, leaving smaller towns and rural areas dependent on low-capacity wireless backbone networks. A new ICT Bill has been drafted, but it does not spell out how the various ICT Acts would relate to each other or even indicate which ones would be repealed.

An important principle for the design of these regulatory authorities is that it would have access to its own funding sources and not be reliant on budgetary transfers from the national government. The most common approach, to impose fees on the regulated industries or the consumers of regulated services, would be mandated to generate its funding requirements from a range of user fees in the road, rail, and aviation industries. Other sources of revenue could include charges for various services: for example, in the aviation sector, aircraft registration fees, fees for the examination and registration of pilots, and various other licensing activities.

The other aspect of regulation that requires further consideration concerns issues that emerge from increased regional integration of economic activity. The quality of regional transport infrastructure is critical for linking land-locked Zimbabwe to regional markets.
within Africa and to international markets. This is particularly the case for Zimbabwe’s links to South Africa. Over the past two decades, there has been a dramatic increase in the importance of Zimbabwe’s trade with South Africa, which has increasingly replaced international markets for Zimbabwe’s exports and imports.\(^4\) Regulatory and administrative hurdles continue to inflate costs and prolong delays for freight movements along the strategic road and rail routes used by Zimbabwe. Delays at border crossings and ports increase substantially the time required to transport goods to and from Zimbabwe and to transit the country. Moreover, within the Southern Africa region there has been only limited progress in implementing the Yamoussoukro Decision of 1999 concerning liberalization of airline services in Africa. In the case of air transport, even with a strong recovery in tourism in the decade ahead, the size of the Zimbabwe market will remain small. These realities point to the need to develop regional hubs that serve multiple countries.

Another important institutional change in the transport sector concerns the Department of Roads (DoR). The proposed program calls for transformation of the DoR into an autonomous road agency responsible for procurement of services from the private sector, rather than continuing with the current practice of relying on in-house execution of works. This change would help build the substantially larger construction and maintenance capacities that will be required in the decade ahead. An enlarged private sector capacity in these areas will also benefit the urban councils and RDCs that face large construction and maintenance programs, but are currently hampered by a lack of force account capacity and limited supply of services from the private sector.

### 3.3.5 Technical Support for the Program

The Action Plan proposes a program of institutional and human capacity building, technical studies, and services for the infrastructure sectors in the decade ahead. As Annex Table 2.1 indicates, the proposed program is in the range of $260 million for the decade as a whole, with much of the support required in the start-up phase of the program in 2011-13. As the discussion in Chapters 4 and 5 indicates, a substantial amount of support will be required for the development of stronger capacities within the various regulatory authorities already in place or that are proposed under the program. The other large claim on funding for technical support will be for teams of specialists that include lawyers, financial specialists, and technicians to advise and assist the government in the design and negotiation of PPP-related contracts, including arrangements for take-or-pay contracts in water storage and transport and power generation, and concession agreements for provision of railway and airport services. International experience indicates that successful PPP programs require good public sector management systems, and especially transparent tender processes and enforceable contracts, the use of transactional advisors, minimum political interference, and a relationship of trust between the public and private sectors, all areas in which Zimbabwe could benefit from access to the experience of other countries and best international practices. The total amount of funding proposed for transactions advisory teams in the various sectors is $90 million.\(^5\)

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\(^4\) As Annex Table 4.5 indicates, South Africa now supplies about 60 percent of total imports into Zimbabwe, and now accounts for more than 50 percent of Zimbabwe’s exports. By way of comparison, South Africa accounted for about 20 percent of Zimbabwe’s imports in 1990, and as recently as 2000 it was a market for only 10 percent of Zimbabwe’s exports.

\(^5\) Experience from the United Kingdom suggests that the cost of these transactions teams are likely to be in the range of 2 percent of the capital costs of the projects. With a total of $4.6 billion proposed for private investment in PPP-type arrangements, the cost of transactions teams could be in the range of $90 million in the decade ahead.
In the case of the power sector, for example, a total of $156 million is proposed for capacity building and technical support and studies; a total of $60 million is proposed for the upgrade of commercial aspects of the ZETDC operations, including enhancements to billing systems and record keeping in conjunction with a move to installation of a system of prepaid meters aimed at reducing the very high levels of accounts receivable. Transaction advisory services for the privatization of ZPC and the development contracts with IPPs are projected to cost $40 million. Technical studies amount to about $46 million and include $25 million for feasibility studies for new generation and related preparation of PPP arrangements for these new investments. The balance of the funding would be devoted to training and capacity building.

3.4 IMPLEMENTATION OF THE PROPOSED PROGRAM

3.4.1 Importance of Sequencing Program Implementation

One of the key points about the proposed Infrastructure Action Plan for the decade ahead is that the funding requirements are very large. These funding requirements exceed the financial capacities of any one group of stakeholders involved with infrastructure services in Zimbabwe. Successful implementation of the proposed program will require a partnership that involves the National Government, state enterprises and local governments with responsibilities for infrastructure services, the donor community, and private investors.

Successful implementation requires that the proposed Action Plan be implemented in a carefully phased manner. The immediate priorities are threefold: (i) move ahead with rehabilitation programs as quickly as funding and institutional capacities permit; (ii) enter into an arrears clearance process with the international financial community as early as possible; and (iii) lay the policy, regulatory and institutional foundations required for a subsequent successful build-up in private investment in new infrastructure capacity and in the private provision of infrastructure services. If these elements of the framework are put in place in the next two to three years, the prospects for mobilizing the $4.6 billion of private investment required for expansion of infrastructure capacity and service provision in the decade ahead will be enhanced considerably.

Without early progress on the operating environment for infrastructure service provision along the lines discussed elsewhere in this Chapter, potential private investors will be uncertain about the manner in which the existing incomplete framework for private investment in infrastructure will evolve. This continuing uncertainty will heighten investor perceptions about the risks involved in making major new commitments in Zimbabwe. Comparable investment opportunities elsewhere in the region and in other parts of the world will be viewed by potential investors as more attractive.

3.4.2 Overview of Program Implementation

Table 3.5 sets out an indicative set of timelines for implementation of the proposed Action Plan. The key elements of the operating environment for infrastructure service provision include the proposed program of reform for the regulatory environment, the commercialization and or privatization of the nine state enterprises involved with service provision, improvements in the legal and regulatory framework for private investment in PPP-type mechanisms, and various initiatives aimed at ensuring that a strong domestic supply response flows from the proposed build-up in infrastructure-related spending. The Report proposes that this set of reforms is completed within the next 3-5 years.
The second component of the proposed program is the rehabilitation of the existing infrastructure assets. The Action Plan calls for the rehabilitation of the bulk of the water, sanitation and power facilities within the next three years, subject to the availability of funding for the work required and implementation capacities within the government agencies responsible for these types of initiatives. Rehabilitation of the rail and civil aviation infrastructure would be completed over the next five years. Rehabilitation of the road network will take at least a decade, and in the case of the tertiary network, very likely about 15 years. A clear set of priorities will be required for this extended period of rehabilitation within the roads sector. Chapter 9 sets out guidelines for these priorities. At the same time, the level of financial support for routine maintenance will grow steadily throughout the decade ahead as the rehabilitation and backlog of periodic maintenance is completed.

Table 3.5: Zimbabwe: Summary of Schedule of Institutional and Related Activities for Proposed Infrastructure Action Plan

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Source: Estimates by authors based on individual charts of Report. Note: the Report does not include proposals for investment in new capacity for road networks.

The third major component of the Action Program is the $4.6 billion of investment in new infrastructure capacity and service provision by the private sector. In the case of the power sector, long lead times are involved in the construction of new generation plants. Under the proposed Action Plan, the dates for commissioning of the Kariba Plant extension, Units 7 and 8 at the Hwange Thermal Plant, and the Greenfield investment in the Gokwe North coal-fired plant, are 2015, 2017 and 2018 respectively. Construction of these plants will require 3-4 years. The implication is that work on the Kariba Plant extension would need to start by about 2012, which is why Table 3.5 includes a start-up for PPP-related investment activities in 2012. The implication is that a well qualified transactions advisory team will need to be in place in 2011.

A high priority would also be accorded to increased numbers of communications platforms with links to the global network of submarine cables, and to the installation of a national fibre optic broadband backbone network by 2015. In the case of the railway
and civil aviation programs, the proposal is to complete the restructuring of NRZ and CAAZ before end 2012. Assuming that the proposed new law for PPP-related investment activities is promulgated in 2012, work would start on the design and award of concessions for railways and airport services in 2013. Transaction advisory teams for these projects would need to be in place by 2012.

3.5 DRIVERS OF ZIMBABWE’S FUTURE GROWTH

Zimbabwe can count on several assets to boost productivity and output growth: a relatively young population, a highly educated diaspora, and regional connectivity within its sub-region, in particular proximity to South Africa. However, given the neglect of infrastructure assets in recent years, the changes in the regulatory environment, and rapid changes in technology over the past two decades, it would be hard for Zimbabwe to reap these benefits without significant improvement in the country’s regulatory framework and provision of good quality infrastructure. In this context, an understanding of the contribution of infrastructure to output growth would be of great use to policymakers. Relatedly, a number of key policy and structural weaknesses will need to be addressed, in particular, a sound macroeconomic policy framework and healthy financial system, the low level of human capital, a large informal sector, and widespread poverty. Furthermore, poor physical infrastructure (including transport, telecommunications, energy and water), restrictive regulations, and insufficient competition in key sectors are hindering productivity growth. In this environment, larger firms are likely to successfully navigate around costly administrative burdens and manage to overcome infrastructure lags, while many small- and medium-scale firms face severe constraints to investment and expansion.

Several factors affect productivity. Empirical studies cite a diverse set of factors from external shocks, to changes in government policies, political disturbances, and conflicts, to the quality of a country’s economic, social, and political institutions. The preceding sections discussed how the low growth rates in Zimbabwe may be accounted for by both a significant slowing of capital inputs and falling productivity growth. This section provides a broad overview of some of the key determinants that explain Zimbabwe’s performance. For the purpose of this study the section will focus on only three key factors, namely structural reforms (including governance and investment climate), human capital, and physical infrastructure.

Structural Reforms

Since 2009, Zimbabwe’s new government has instituted several reform initiatives aimed at rebuilding and reviving economic growth in the country. In the government’s STERP and MTP, the importance of improving institutions that foster investment to enable Zimbabwe to reach its aggressive growth targets has been highlighted. However, challenges still remain including pressures from a large public debt, the wage bill, and political roadblocks in achieving objectives of the Global Political Agreement (GPA). Therefore, as recognized by the IG, additional reforms will be needed to bring growth rates up to the higher level required to sustain improvements in per capita GDP and to reduce poverty. Some of these reforms are reminiscent of those rejected in the 1990s, with dire consequences for growth and TFP. The following consideration highlights several key areas for further reform.

Physical Infrastructure:

An adequate supply of infrastructure services is an essential ingredient for productivity and sustained growth. Poor
economic infrastructure contributes to high production costs for businesses, raising unit production costs and making the country uncompetitive. Growth requires investment in physical capital—in plants, machinery, raw materials, and the like that are central to production and investment. Countries, such as Singapore, China, and India, that have achieved sustainable growth have managed a significant increase in the levels of both domestic and foreign investment as a percentage of GDP. Conversely, restricted or expensive access to finance is a major constraint on such investment, particularly for small and medium-sized enterprises and for the informal sector. A well functioning financial sector enhances economic growth through ensuring that capital is not left idle, that it is directed to where it is most beneficial, and that risks are borne efficiently.

Alongside the quantity, the quality of investment matters.

Deterioration across all major infrastructure services in the country has been marked over the past decade, reflecting poor maintenance and limited new investment in key infrastructure such as power and transport services. In the power sector, the deterioration of generation capabilities coupled with degrading of the transmission and distribution network has resulted in unreliable power supplies and severe electricity shortages. Only one half of Zimbabwe’s installed generation capacity of about 2,000 MW is available and in reliable condition. Frequent power interruptions have sharply increased production costs for manufacturing and other enterprises, making them uncompetitive in many areas. A large number of firms are forced to operate their own power generators.

Box 3.1. Infrastructure Improves Nonagricultural Earnings for the Poor

Increasing access to infrastructure (especially roads combined with electricity) linking rural areas to small towns and urban centers, along with strong nonagricultural growth, contributed to rising informal sector employment in rural Bangladesh, India, Vietnam, and El Salvador. In contrast, the lack of infrastructure in Africa constrained access to informal employment in rural areas and kept the rural poor engaged in more traditional and lower return nonfarm activities linked to agriculture. As such, lifting infrastructure constraints to improve market access, as well as increasing access to electricity and education in high density rural area and small towns, may raise nonagricultural earnings for the poor. But improving access to infrastructure requires more than expanding public investments—it also requires higher institutional quality. Keefer (2000) has argued that poor institutions in Uganda may have prevented improvements to the power infrastructure in the 1990s.

Source: Pro-Poor Growth in the 1990s: Lessons and Insights from 14 Countries, A joint product of AFD, BMZ (GTZ, KfW), DFID and The World Bank.

At independence in 1980 through the early 1990s, the coverage and quality of transport infrastructure of Zimbabwe were among the best in the region. The lack of routine and periodic maintenance of the transport infrastructure for a decade or more, however, has resulted in serious deterioration in the quality of these assets.

In terms of the road network, the state road network constitutes about 20-25 percent of the total road network for the country but carries more than 70 percent of all person journeys and over 80 percent of all goods using roads. Thus this network is most important and constitutes the economic artery of the state. Surfaced roads in Zimbabwe are designed for 20 years. Most of the state roads have outlived their design life by more than 10-15 years. The current condition of the network is not known with accuracy, but it is clear that it has declined significantly since the mid-1990s as a result.

6 See chapters 9-11 for a discussion of the transportation sector.
of the lack of funding for routine and periodic maintenance. Most of the deterioration has occurred on urban roads and on the unpaved rural road network.

The railway network of Zimbabwe has also seen a dramatic decline in the past decade. This decline is mainly due to aging track, including insufficient ballast, rail wear, deteriorating earthworks, and rail signaling and communications with obsolete equipment and lack of spare parts. Rolling stock suffers from low availability and utilization and, as a result, the railway is not able to meet current demand for freight services. The freight carried dropped from more than 14 million tons in 1990 to 9.4 million tons in 2000 and to 3.8 million tons in 2008. Up to 20 percent of the track has speed restrictions and only 24 of the 85 mainline locomotives are operational. This adversely affects business costs incurred to find alternative transport means, as well as the time cycle for goods to get to market.

As a result of the economic problems of the past decade and sharp decline in tourism in Zimbabwe, international and domestic aircraft movements have declined sharply. The former declined from about 31,000 in 1999 to about 16,000 in 2009 (Chapter 11). The decline in domestic movements was even greater, owing to diminished domestic travel by tourists and the adverse effect of domestic economic difficulties.7

The large contraction in demand for air services to and from Zimbabwe has contributed to a sharp reduction in the number of international airlines that service the Zimbabwe market. During 1997-2007 more than twenty scheduled airlines discontinued services in Zimbabwe, including major carriers such as Air France (1997), KLM (1998), Lufthansa (2000), Swiss Air (2000), and British Airways (2007). At present, 12 airlines operate services to and from Zimbabwe. These include Air Zimbabwe, which is the primary domestic carrier owned by the Government, Kenya Airways, Air Malawi, Botswana Airline, South African Airways, South African Airlink, Comair (which is a franchise partner with British Airways), Air Namibia, Fly Kumba, Zambezi Airline, Ethiopian Airlines, and Angola Airlines.

The political and economic crisis experienced in Zimbabwe in the past decade has also reduced the growth of ICT. Limited depth of innovation has been shown to restrict growth and this can be particularly relevant in Zimbabwe’s case as the country school enrolment and literacy rates still remain high in comparison with other African countries.

An area for focus emphasized in the country’s new ICT policy has been to enhance the current education curricula to include more emphasis on technology oriented subjects including more funding and support for R&D initiatives.

**Financial Development:**

Financial development promotes economic growth by improving the efficiency, stability, and accessibility of the financial system. An efficient financial system reduces information and transaction costs by performing the following five core functions well: producing ex ante information about possible investment and allocating capital; helping to monitor investment and provide corporate governance after providing finance; facilitating the trading, diversification, and management of risk; mobilizing and pooling saving; and easing the exchange of goods and services.

Financial repression over the last decade and high financing costs have discouraged domestic investment. High real interest rates continue to limit private credit growth, despite low financial intermediation due to the lack of effective competition and high

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7 See chapter 11 for a thorough analysis of the state of air transport in Zimbabwe.
level of non-performing loans. What has been the impact of financial repression on growth? International evidence is mixed. While the effects of mild, periodic financial repression on growth is ambiguous, there is adequate evidence that large negative interest rates cannot be sustained and will eventually lead to reduced growth. In Zimbabwe, the gap between average real lending and borrowing rates is still too large, suggesting room for efficiency improvements. Nominal and real lending rates have also become needlessly high in view of high and variable inflation and resultant uncertainties about price stability. In Zimbabwe, tight liquidity constraints and wide intermediation spreads have further discouraged savings deposits, leading to a vicious circle of tight liquidity constraints. The slow execution of due process, lenders’ inadequate access to timely foreclosure procedures, the absence of credit assessment information, and weak enforcement of property rights all undermine financial intermediation.

In contrast, an efficient financial system enhances a country’s growth prospects by channeling resources to their most productive uses, thereby fostering a more efficient allocation of resources. It also helps boost aggregate saving and investment rates, thus speeding up the accumulation of physical capital. Finally, it enhances growth by strengthening competition and stimulating innovative activities, so promoting dynamic efficiency.

**Investment Climate:**

It has been widely accepted that poor governance deters investment, undermines competition, encourages rent-seeking behavior, and distorts public expenditure in an economy, and as a result, negatively affects productivity. Political interference in the civil service and politicization of decision making hampers effective public administration. A major concern for many economic actors in Zimbabwe centers on the land reform policy and indigenization bill. The uncertainty as to direction and implementation of these critical pieces of legislation act as a major disincentive for any long-term large private investment, particularly in the form of FDI.

FDI can positively affect TFP in the form of increased capital accumulation, improved efficiency of local businesses, technological change, and human capital accumulation.

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**Box 3.2. Improving the Investment Climate**

Improving the investment climate stimulates growth, influencing the size of the formal sector and the composition of formal employment. In Vietnam, Bangladesh, and Tunisia, investment climate improvements, trade liberalization, and special incentives for manufacturing industries significantly increased unskilled manufacturing employment, particularly for women. In Senegal, rising urban employment reflected high levels of investment, a competitive exchange rate, and a fairly good investment climate. By contrast, policy uncertainty and macro instability constrained nonagricultural investment and employment in Zambia, increasing urban poverty. In Ghana, private investment remained low (undermined in part by persistently high inflation and a poor investment climate), causing manufacturing employment to contract in the late 1990s.

Source: Pro-Poor Growth in the 1990s: Lessons and Insights from 14 Countries, A joint product of AFD, BMZ (GTZ, KfW), DFID and The World Bank.
Governance issues are also reflected in the ease with which the private sector can conduct business. Allegations in the private sector about irregular application of law and regulations, and lax enforcement of prohibiting bribes to corrupt officials are commonplace in Zimbabwe.

Figure 3.4 provides a snapshot of the business environment across a number of indicators in Zimbabwe in comparison with other countries in the region. Zimbabwe ranked 159 in the 2010 Doing Business Survey, a move up of one position from the 2009 Report. Its ranking however is still well below those of neighboring countries South Africa (34), Namibia (66), and Botswana (45). As highlighted in Figure 3.4 the country’s regulatory framework is a significant stumbling block for operating a business in Zimbabwe. The Government adopted an indigenization law that set a goal of 51 percent domestic ownership of business firms. The responsible minister has discretionary authority for the implementation of the law, but the implementation regulations are not yet in place and it is not clear how this discretion is to be exercised. While the liberalization of the economy launched by the IG is a step in the right direction, urgent regulatory reforms are essential to untangle the costly and complex web of regulations that govern business activity at present.

**Human Capital**

A wide range of labor skills is needed to catalyze and sustain economic growth, including education at all levels from primary schools through to universities, and including technical and vocational training as well as ‘learning by doing.’ Unfortunately, progress in overcoming shortages of skilled and trained manpower in the world’s poorest countries has been disappointingly slow. Although basic education is widely considered to be critical for reducing poverty, there is emerging evidence that secondary and higher education are more significant in raising long-term growth rates and income levels as they play a key role in the creation and application of new knowledge and technologies. This effect occurs primarily through people’s improved capabilities to absorb technological advances.

Access to and quality of education are major factors that impede productivity growth. Post-independence (during the 1980s) the Zimbabwean government recognized this and to reverse the racial imbalances in education adopted a policy of universal primary school education.
enrollment. Tertiary education also faced policy actions which included the building of more technical colleges and revamping the apprenticeship system—all to redress racial imbalances. Severe economic challenges since 2000 eroded Zimbabwe’s gains with regard to historically high literacy rates of 98 percent (which had benefited from high investment and appropriate policies in education during the 1980s), leaving the country with the current skills deficit.

There are multiple avenues by which human capital—the ability and efficiency of people to transform raw materials and capital into goods and services—affects economic growth. The accumulation of human capital improves labor productivity and increases returns to capital. A well-educated workforce also facilitates the adoption and diffusion of technology. Less often noted is that a critical threshold for human capital stock may be a precondition for growth because low education levels may act as a barrier to imitation, which may prevent the diffusion of technology. Larger and deeper stocks of human capital may also have spillover benefits. A prime example is that more educated mothers tend to have children with better health and education outcomes.

Education increases an individual’s probability of being employed in the labor market and improves earnings capacity. Since human capital encompasses skills that can be acquired through the educational system, at the micro level education contributes to an individual’s labor productivity and earnings as well as to the level of production. That said, human capital development is intrinsically welfare enhancing. The Government has prioritized the rehabilitation of schools, construction of new schools, and capacity development of public administration (including teacher training, review of existing curricula, among others). Investment in education and skills can be as important as investment in machinery and plants in delivering growth. Investment in this “human capital” is especially appealing as it directly leads to improved human development as well as helping to drive growth.

**Box 3.3. Rebuilding public sector capacity**

Zimbabwe lost nearly a fifth of its population, including personnel with technical, professional, and managerial skills, owing to brain drain during the political and socioeconomic crisis. The low pay of civil servants and associated low morale, absenteeism, and high staff turnover also continue to exacerbate the capacity problem. The public sector also lags behind in upgrading office technology, skills, and related infrastructure. Priority should be given in the short- and medium-term to strengthening the government agencies that will be in the forefront of the civil service capacity development and rehabilitating tertiary education institutions so that they can continue to produce quality technicians and professionals for the private and public sectors.

The fiscal space is severely limited given the many competing public expenditure demands. Unsustainable wage demands would need to be contained to generate savings needed for capital expenditures for emergency rehabilitation of infrastructure and social expenditures. Measures to strengthen government capacity to efficiently and effectively manage all public resources, including mineral wealth, need to be pursued vigorously.

*Source: Pro-Poor Growth in the 1990s: Lessons and insights from 14 Countries, A joint product of AFD, BMZ (GTZ, KfW), DFID and The World Bank.*
3.6 TRADE AND OPENNESS

For most of its history over the past 50 years, Zimbabwe’s integration into global markets has been partial. This has impeded integration into goods and input markets, notably integration into financial capital. Openness of a country’s goods markets encourages growth, facilitating technology transfer and competition, and benefiting consumers. Zimbabwe has followed a policy of ‘import substitution,’ deliberately shielding many industries from international markets to allow them to develop. The success of such policies has been mixed. As protection has costs in terms of lost growth, such policies were harmful. Similarly, capital market integration that allows smoothing of living standards, risk-sharing among countries, and technology transfer from the developed world has been significantly impeded by political sanctions at various times in Zimbabwe’s history.

While, the liberalization of the economy launched by the Government is a step in the right direction, more urgent regulatory reforms are essential to untangle the costly and complex web of regulations that govern business activity at present. The challenge for Zimbabwe in both of these areas is to design proper reforms that take into account the proper sequencing and pacing of reform to smooth the adjustment for domestic producers.8

Agricultural Policies:

The uncertainties and disruptions of land reform, erratic weather, HIV/AIDS, the high and unpredictable inflation, and unstable agricultural policies have undermined agricultural production and productivity and resulted in persistent food shortages in the country. Agricultural production in general has suffered as a result of weak support services, lack of credit, and acute shortages of essential inputs such as seeds, fertilizer, and fuel. In drier areas water scarcity is a major challenge for farmers. Drought has exacerbated an already difficult situation and has made it harder for farmers in dry areas to increase their productivity. Food insecurity continues to worsen both for urban and rural populations. Zimbabwe has become a net importer of food products and many millions of people are now dependent on food aid.

3.7 KEY POLICY MESSAGES

Zimbabwe has recovered from the over a decade of economic decline and stagnation. As it emerges from this lost decade, medium- and long-run growth will reassert itself as the priority concern of policy makers. Short-term aggregate demand management will have to give way to structural policies that augment the economy’s productive capacity. It is thus a good time to take stock of Zimbabwe’s growth
prospects further out and to reconsider its pathways to growth. Inward-looking policies that were effective in the period just after independence are likely to be less effective in today’s environment.

Zimbabwe’s historical economic growth pattern, though, suggests that swings in growth are mostly accounted for by a significant slowdown in capital input and sharply negative total factor productivity growth. It also suggests that raising real GDP growth will require increases in both investment levels and productivity. With a ratio of investment to GDP of 13 percent during the last decade, significantly higher productivity growth and investment will be needed to sustain GDP growth rates at 5 percent or higher. The historical performance also indicates that, in the absence of structural reforms and strong institutions, higher rates of productivity growth would be hard to achieve.

The government has started to implement a number of reforms designed to alleviate some of the constraints to export performance aimed at improving competitiveness. Important efforts are ongoing to improve access and affordability of basic physical infrastructure. In parallel, the government is processing key reforms aimed at improving the business environment in the areas of the judiciary and administration of justice, the financial sector, and the land tenure and mortgage regimes. These reforms should also improve the availability of finance. Further efforts are still needed to exploit the growth potential of the rural economy, improve the regulatory and institutional framework, strengthen transportation links to South Africa, enhance education and skill development programs, raise labor productivity, and accelerate diversification.

Productivity growth, in particular, will play a bigger role as a driver of economic growth. Structural policies that promote productivity growth therefore hold the key to sustaining the country’s growth that, in turn, will reduce the numbers of the poor and spread the benefits of economic progress to more people. Four specific areas—trade, human capital, infrastructure, and financial development—are significant in this respect. Although the four areas were examined separately, much interdependence exists between them, and progress in one area will facilitate improvements in another. For example, a major impediment to trade in many parts of the region is inadequate transport infrastructure. Improvements in this area, both domestic and regional, can stimulate and catalyze intraregional trade and trade in general. Similarly, financial development, especially the development of bond markets, which provide a stable and secure source of long-term financing, will have a positive impact in addressing the country’s need for transport, communications, and energy infrastructure. Financial development can also promote the accumulation of human capital by channeling resources to individuals who want to invest in their own education. Progress in the four areas will thus be mutually reinforcing and jointly push out Zimbabwe’s production frontier.

Finally, good governance and institutions matter for growth. In particular, government effectiveness and control of corruption have significant positive impacts. In addition, governance has a bigger effect in developing countries where the government tends to play a larger role in the allocation of resources. Competent and honest governments that efficiently deliver basic public services, such as administration, education, and health care, raise the productivity of all firms and industries. Such governments are also more conducive for political stability and a more benign investment climate. Increasingly, an important dimension of strong governance and institutions will be the capacity to deliver inclusive growth which spreads the fruits of growth to the wider population. As conditional cash transfers show, well-designed inclusiveness-promoting programs can make a big dent on poverty at manageable fiscal cost. By promoting social stability, such programs can foster a more conducive environment for growth.