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ADB Assistance Program in Afghanistan: Outputs and Outcomes

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ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
CAREC	–	Central Asia Regional Economic Cooperation Program
DABS	–	Da Afghanistan Breshna Sherkat
JFPR	–	Japan Fund for Poverty Reduction
MTR	–	midterm review
MFF	–	multitranches financing facility
O&M	–	operations and maintenance
RCI	–	regional cooperation and integration

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I. BACKGROUND

1. Asian Development Bank (ADB) operations in Afghanistan were discontinued during the Soviet invasion of the country in 1979, resuming only 10 years ago after the fall of the Taliban. The central theme of the ADB assistance during the last decade has been reconstruction and development, focusing on physical infrastructure investments. Policy advice, institution building and people training have also been part of the assistance program.

2. The ADB assistance program has the following features:

- (i) Alignment with government strategic priorities—set up in partnership with the donor community;
- (ii) Compatibility with ADB's own strategic framework, including Strategy 2020;
- (iii) Close coordination with other development partners, including an agreed split of sectors, themes and geographic coverage; and
- (iv) Adjustment to the conflict situation, with emphasis on weak institutions and poor security.

3. ADB has approved \$2.4 billion for Afghanistan projects since 2001, disbursing close to \$900 million of this finance. Operations started with a range of ad hoc emergency reconstruction projects, most focusing on small-scale irrigation, the reconstruction of several roads close to key towns, upgrading regional airports and building electricity transmission lines to supply Kabul and other secondary cities. For a time, ADB also provided budget support, an activity discontinued in 2008. Technical assistance has been a regular feature of the ADB assistance program, with funds used mainly to establish new institutions and strengthen existing ones. Technical assistance has also been used to train people on planning, policy formulation, project management, financial management and project evaluation.

4. Funding to Afghanistan was provided at first on a concessional loan basis and exclusively from the Asian Development Fund (ADF) window. However, because of debt sustainability concerns, ADB and the World Bank now extend funding exclusively on a grant basis.

5. Although ADF resources are allocated to all eligible ADB countries on the basis of a performance-based framework and criteria agreed with donors, Afghanistan benefits from a post conflict premium. This premium is a special "set aside" for the country. Although originally this was to be phased out over time, most of it has been kept intact. The reason for this is the continued conflict and the difficulty to secure sufficient domestic and international finance to cover capital investment requirements, especially in infrastructure. The average allocation of ADF resources to the country has been close to \$250 million a year, making Afghanistan one of the largest recipients of ADF resources. ADB ranks fourth among donors operating in Afghanistan, but first among those within the infrastructure space.

II. STRATEGY

6. ADB operations have evolved over the decade and are now much more focused around three sectors (transport, energy, and irrigation and water improvement) and six themes (governance, gender, climate change, capacity development, private sector development, and regional cooperation and integration [RCI]).

7. The rationale for this strategic choice is summarized as follows:

A. Transport Investments: The Quest for Better Connectivity and Trade

8. Afghanistan is poorly connected, both internally and with the outside world. The road network, covering national, provincial, rural and urban roads, in the country today is either incomplete or in bad shape. Rail services are non-existent, with the exception of the recently ADB-financed rail line from Hairatan in Uzbekistan to Mazar-e-Shariff. Airports lacked the most basic facilities and security standards. This limits investment, jobs and trade. Poor connectivity also limits access by the poor in rural and urban areas to opportunity, as well as to basic public services. Connectivity is a clear driver for change, stability and growth. It is also a driver for welfare and inclusiveness.

9. Investment in transport has already been shown to contribute directly and indirectly to economic activity and poverty reduction. An expanded, modern and more efficient multimode transport system brings together communities, cuts transport costs and travel times for all, raises competitiveness and productivity, provides access to markets and services. It also converts Afghanistan into a true conduit for Central Asian and South Asian trade. This regional dimension offers opportunities for people and businesses and brings Afghanistan closer to its neighbors, most of whom are land-locked and need Afghanistan to reach ports and markets in the south. This regional dimension is one clear and tested means to ensure the economic sovereignty of Afghanistan in years to come. It figures prominently in the Central Asia Regional Economic Cooperation Program (CAREC).

10. Transport sector investment needs are difficult to finance and implement. The investment needs are certainly larger than the capacity of the country to fund them. They are also larger than the resources available from ADB and others, at least in the short to medium term. This scenario invites focus and selectivity. This is why ADB has been, and remains, focused on the reconstruction of the main national road and rail networks. This work starts with those sections with the greatest cost recovery and return on investment potential, as well as with those with the lowest future operating maintenance needs. This approach captures both the national and regional dimension while containing budget allocations for maintenance and repairs. Gradually, investments will need to be expanded to cover provincial, rural and urban roads. These are also essential connectors to growth and inclusiveness. Accompanying these investments is the creation of more efficient and effective institutions, and the development of practical, innovative and new funding arrangements to cater for maintenance. ADB is already working on the establishment of a national highway authority, a rail authority and a road fund. The latter will generate \$140 million a year and cover all the operations and maintenance (O&M) requirements in the sector.

11. The national trunk road system represents the first and most pressing need for Afghanistan. Within this, the so-called national "ring road" is the top priority. This road is almost complete, except for 230 kilometers between the province of Bagdis and Herat. When completed (over the next 48 months), this road will unleash unprecedented economic opportunities across the entire corridor and the rest of the country. Other priorities also include various unfinished sections linking Kabul to Jalalabad (at the border with Pakistan) and the Mazar-e-Shariff to Tajikistan and Turkmenistan. The completion of the north/south corridor is another top investment. It brings this economic area closer to other markets in Afghanistan, and adds connectivity to provincial communities and to neighboring countries (as well as to the new mining centers now being developed in Afghanistan). On the rail front, the top priority is to expand the network from Mazar-e-Shariff to Bamian in the south and to Andhoy at the border with Turkmenistan. The Bamian section is to be financed and constructed by the People's Republic of China (an obligation under the copper mine concession contract awarded a few

years ago). The Andhoy section is to be financed by ADB. Future rail investment needs will be linked to the availability of finance. ADB will not take on board unfunded mandates. The long term goal is that one day the rail routes will follow closely those around the ring road. Together with investments in airports, this will create a true modern and comprehensive intermodal transport system—the bridge to north and south, as well as east and west trade routes, and the means to create jobs, trade and prosperity.

B. Energy Security: A Means to Transform the Economy and Add Welfare

12. Afghanistan lacks energy security. This affects people and business. The economy cannot develop without proper energy supplies. The strategic stance taken by ADB has been to first secure imports from the neighboring countries before focusing on domestic energy sources, including gas, hydro power and renewables. This strategy is working.

13. The first and most important investment so far in the energy and power sector by ADB in recent years has been the construction of electricity transmission lines from Uzbekistan and more recently from Tajikistan. The second most important investment is the expansion and modernization of the distribution network. Both investments have been truly transformational. Before these two operations, Kabul had only 2 hours a day of electricity supplies. Today, the city has supplies 24 hours a day. This has benefitted 3 million people in Kabul and another 3–4 million elsewhere. As with transport, the regional dimension cannot be underestimated. In this case, what is particularly noteworthy is the willingness and ability of Uzbekistan to supply electricity year-round, an activity also fostered under CAREC. Tajikistan supplies will add to the energy balance sheet.

14. ADB operations in the energy sector are not confined to investments in new facilities alone. ADB has been instrumental in creating a new institution to run the electricity operations in the country, de-linking this service from the ministry of water and power. The corporatization of the service under a new company called Da Afghanistan Breshna Sherkat (DABS) has professionalized investment planning, day to day operations, policy reforms, financial management, and governance in general. The company is already operating on a commercial basis. It is generating income, a portion of which can be set aside for O&M requirements in future. The creation of DABS is a landmark reform.

15. One leading regional project under discussion could transform the energy situation for many years. This is the Turkmenistan-Afghanistan-Pakistan-India gas pipeline (TAPI). A project of this nature would deliver not only gas supplies to ensure total energy security but also substantial transit fees.

C. Agriculture and Agribusiness: Followed by Water Management

16. Agriculture will be the mainstay of the Afghan economy for years to come. ADB intends to focus its support for this sector through two interrelated interventions: irrigation and rural finance. Irrigation contributes to productivity and allows farmers to diversify their crops, including shifting away from rain fed operations. Access to finance in the rural areas is, and will remain, a major obstacle to development. ADB has also performed well in this area, with investments targeting the creation of market infrastructure and produce quality standards. These are both pre-conditions for trade, higher prices and income. The strategy will be continued in future. A precursor to this particular water and market infrastructure strategy has been the operation of two pilot projects financed under the Japan Fund for Poverty Reduction (JFPR). One focused on small scale irrigation schemes and the other on facilities to improve quality standards,

handling and distribution capabilities for perishable produce (including potatoes in Bamian). The outcome of these investments has been sound in both cases and follow-up stand-alone and multitranche financing facility (MFF) projects will be continued as a result.

D. Themes

17. ADB has integrated six themes—governance, gender, climate change, capacity, private sector development, and RCI—in each of the investment programs in Afghanistan. Governance has received the greatest attention, followed by RCI. Gender, although challenging, is increasingly being mainstreamed in infrastructure projects. Capacity is a recurrent theme in all projects, and so is private sector development. Climate change figures prominently in all irrigation and water management projects, but also in energy operations.

III. OUTPUTS

18. The ADB assistance program has yielded a range of outputs, and done so more or less within the projected timelines. These outputs are summarized in an attachment to this note. Key features are as follows:

A. Quantitative

1. Actual

- (i) 811 km of roads rehabilitated
- (ii) 75 km of railways constructed
- (iii) 4 airports refurbished
- (iv) 164 km of electricity transmission lines constructed

2. Planned

- (i) 875 km of roads to be rehabilitated
- (ii) 225 km of railways to be constructed
- (iii) 435 km of distribution and transmission lines to be constructed
- (iv) 9 power substations
- (v) 250 irrigation canals to be rehabilitated

B. Qualitative

1. Actual

19. ADB assistance has produced more than physical outputs. The policy advice and technical assistance mandates have created institutions and strengthened others. For example, ADB supported the creation of DABS which is now operating the entire power sector in the country. ADB modernized the operating models of the Ministries of Agriculture, Irrigation, Rural Development, and Public Works. ADB has also trained people in various disciplines ranging from planning to project management and financial oversight. The intention of these efforts is to be more effective and efficient. In the Afghan context, this type of output can have far-reaching results.

2. Planned

20. ADB will establish a road fund, a road authority, a new railway authority, a new asset management system, and an additional training program for the Ministry of Public Works, DABS, and the Ministries of Agriculture, Irrigation, and Rural Development.

IV. OUTCOMES

A. Transport

21. The Ring Road, a network of nearly 2000 km, which is practically complete, except for 230 km between Bagdis and heart, will transform Afghanistan and the neighborhood. This investment will increase the domestic and international trade by ten-fold, cut travel times by at least half, reduce vehicle operating costs by 10–40%, and expand the number of public transport vehicles on the road at least four times the current numbers. Road investments already completed are showing these results. These roads are providing easier and cheaper access to people to reach markets and social service centers—including local schools and hospitals. Access to markets will transform agricultural production and agribusiness. Trade will clearly be on the rise. But none of this would be possible without the required connectivity.

22. New road building program involves communities at the outset, creating jobs and training for the young.

23. A major success under the transport sector is the building of Afghanistan's first ever railway line. This is a project with national and regional content. It connects Mazar-e-Shariff to the country's largest and most important dry port at Hairatan (at the border with Uzbekistan). Over 50% of all imports coming into Afghanistan enter through Hairatan. At the moment, cargo reaching this border town has to be unloaded and re-loaded into trucks, thus adding to costs and time problems.

24. Maintenance and repair will not become a large burden if the following actions proposed by ADB are put in place:

- (i) **Establishment of a road fund.** Work to do this is under way. By the time key investments are completed, this fund will be up and running. And generate \$140 million a year, enough to maintain all existing and new roads being built in Afghanistan. In the meantime, the maintenance needs are relatively small, especially during the first 5 years post-construction.
- (ii) **Establishment of a private/public partnership structure for construction and maintenance.** Under this approach, construction companies will receive financing for the construction (3 years on average) and an annuity to deal with maintenance and repairs. The annuity will be financed by donors (ADB included), the private construction company and the budget. The latter will be the smallest share of the financing plan. This approach is under discussion within ADB and will then be tested in Afghanistan and other countries.
- (iii) **Establishment of road and rail authorities.** These institutions will spin off the two sectors from the Ministry of Public Works and professionalize planning, investment programming and project management.
- (iv) **Asset management program.** This is to be put in place with ADB help within the next year or so.

- (v) **Defect liability insurance.** This will ensure that the cost of sub-quality standards will fall on the account of the construction companies and not the national or provincial budgets.

B. Energy

25. ADB has increased energy security across the country, with special emphasis on Kabul—now home to over 4 million people. A case study on the performance in this sector is shown in the attachments. It is essential to note that in 2002 the country did not have any serious capability to supply energy from its own energy sources. It lacked transmission capacity to evacuate energy from domestic and other sources, and the distribution network was obsolete and mostly incomplete. The majority of people in urban and rural areas were not connected to the grid. Kabul's electrification levels were below 20%. The rest of the country fared even worse. Further, electricity supplies amounted to only 2 hours a day in Kabul and less than half of this in other cities. After the ADB financed transmission line from Uzbekistan, electricity supplies in Kabul rose to 24 hours a day. In other cities such as Mazar-e-Shariff supplies are also close to those available in Kabul. Investments in the distribution network have been stepped up and showing results. Kabul's electrification levels have already risen to 36%. The objective under existing and new ADB projects is to raise them further to 45% within a few years and thereafter to close to 70%. The rest of the country remains at 20%. The objective in the short to medium term is to reach at least 30% and thereafter 50%. This will transform lives, create jobs, stability and prosperity.

26. The other important outcome is the creation of a new company, DABS, replacing the structure previously operating within the Ministry of Energy and Water. This is professionalizing the service and creating the base for greater governance and transparency. The company is fast developing into an efficient one, although it still requires more people and more training. This new institution is a major breakthrough in the sector and the basis for ensuring efficiency in the long haul. DABS is now responsible for planning, investment and asset management, policy formulation and cost recovery actions.

27. The energy sector is being improved in more areas than Kabul. The northern transmission system is being rehabilitated, as is the north east network running into Jalalabad at the border with Pakistan. This area has large population centers. The investments when completed will create the same benefits as those witnessed in Kabul.

28. Lastly, the new transmission line just constructed from Tajikistan will supply electricity to the Afghanistan grid system, further increasing supplies, this time at a relatively low cost.

C. Agriculture and Natural Resources

29. ADB investments in agriculture and natural resources are smaller than those in infrastructure. However, the trend is changing. With an MFF approved a few years ago, ADB is now a key player in the irrigation and water management business. ADB has also mobilized third party finance to pilot a number of community based investments. The results are impressive. In Bamian, a JFPR-funded project transformed the potato production business and helped thousands of people. Potato production losses were reduced from 40% to 1.1%, an outstanding achievement. The same can be said of the small case irrigation program funded under another JFPR. ADB market infrastructure investments targeted quality, packing and marketing. They also added market information services. As a result, production has increased by 30% percent and income more than doubled. These investments will be expanded in future.

30. In the western basins close to Herat, ADB has been financing the reconstruction of small irrigation facilities, including small dams or reservoirs to store and distribute water to farmers. These investments have increased agricultural production by 30% and diversified the production base from rain fed to modern agriculture. The projects are still on-going but the results on the ground are visible and significant.

D. Other Outcomes

31. **Institution building.** ADB has created new institutions in the energy sector (DABS) and is planning a few in the transport sector (national highway authority, the railway authority and a road fund). The objective behind these actions is to professionalize the services and take them out of the ministries, leaving the latter in charge of overall policy formulation and oversight. The main institutions built or strengthened were described above for each sector.

32. **Policy.** ADB has been instrumental on policy advice to the government and selected agencies. The most important advisor mandate has been with the Ministry of Finance. ADB provided support on macroeconomic policy matters, legal frameworks, recurrent expenditure management, taxation, and operation and maintenance finance for infrastructure projects. ADB has also advised on the national development priorities, energy master plans, and agricultural policy.

33. **Governance.** ADB financed programs have introduced governance measures to contain or mitigate risks. Project management is now mostly outsourced, especially contract supervision.

34. **Regional cooperation and integration.** A major feature of the ADB assistance program is its regional dimension. This has raised awareness for connectivity and trade, and has given Afghanistan a tool and information for the establishment of cross-border trade agreements.

V. CHALLENGES

35. Project finance in Afghanistan is challenging at the best of times. Uncertainty over political, economic, security and other development post-2014 adds to this challenge. Some of the major risks are as follows:

A. Security

36. This is now the single most important risk factor behind ADB and other donor operations. Implementing projects on time and within budget is already being affected by this. It is increasingly difficult to secure the interest of consultants and contractors. It is also becoming more expensive to finance and implement projects. Security now accounts for a high share of the total investment plans. ADB has been financing security arrangements under its projects, in all cases using Ministry of Interior personnel. Although the performance so far has been satisfactory, the arrangement does not always convince top contractors and consultants. Without outputs, ADB projects will not be able to deliver outcomes.

B. Funding

37. Infrastructure projects are generally large and long-term. To ensure efficiency, quality and the interest of top contractors, contracts need to be relatively large and funding fully

secured upfront. Contractors are generally skeptical about the government's ability to finance turnkey contracts. There are three concerns:

- (i) The financing plans for projects and the allocations for turnkey contracts need be firm and be so clearly upfront. Contractors will otherwise shy away from doing business in Afghanistan.
- (ii) It is too risky for ADB to commit to investments or start new projects with an unfunded mandate. Infrastructure projects are expensive to prepare, especially in Afghanistan. Road and energy projects cannot be sliced into small sections and contracts. Performance has been affected by this in the past. Securing ADF resources is critical for the ADB strategic compact and business plan in Afghanistan.
- (iii) Operations and maintenance finance resulting from infrastructure investment will place a burden on the national budget. However, ADB is working on various arrangements that would minimize this burden as discussed earlier. In fact, infrastructure is likely to pose less of a problem for Afghanistan on this front than the recurrent expenditure needs associated with health, education and other social services. This is because income generation, establishment of special funds, and external finance resulting from infrastructure operations will contain the budget outlays for operations and maintenance.

C. People and Cost

38. Because of security concerns, it is increasingly difficult to attract the services of quality and reasonably well-qualified staff. The cost of doing business is compounding this problem. Security costs in particular have increased, as rental costs, communications and project preparation.

D. Economy Post-2014

39. The World Bank and others are preparing various simulations about the performance of the economy post-2014. It is a fact that the economy is at present highly dependent on security income and expenditures (making it in some respects, a "bubble" economy). The concern post-2014 is the availability of aid to support projects and the national budget.

E. Operations and Maintenance (O&M)

40. Investments in infrastructure improve connectivity, energy security and water management. These are all major drivers for economic growth and inclusiveness. Afghanistan is the country with the greatest infrastructure gap in the region. Correcting this gap will unleash opportunities in the real and social sectors. It will create jobs and increase trade. The physical and nonphysical investments in the sector being pursued by ADB and several other donors have both a national and regional dimension. The latter is also a critical means to an end; one that Afghanistan cannot afford to ignore. But these investments imply high capital outlays, first to construct the facilities and then to maintain them. One issue to bear in mind, especially under the tighter economic scenarios post-2014, is the impact of these O&M needs on the budget. ADB is of the view that this "burden" can and will be contained. In the case of roads, the approach taken is to establish a road fund. ADB estimates that the model being set up will generate enough revenues to cover the O&M needs of ADB and other transport projects. In the case of energy, DABS is already operating on a commercial basis and is unlikely to need any

additional budget support. The rail line has an O&M contract in place and is fully funded for the foreseeable future. Irrigation O&M costs are in the order of 1–3% of the original investment base cost. Here, the Government is expected to contribute to O&M. However, farmer communities are also doing the same, in many cases, in kind (through labor). The biggest risk with O&M is not the financing plan or the implication on the budget. The biggest risk is that O&M is not carried out. This has been the case in the past in many other countries. ADB is working closely with Afghanistan to ensure this is not the case there. Finally, if capital expenditure outlays are excluded from the equation, then on average a large component of development budgets tend to be recurrent cost financing. Infrastructure is not usually the largest consumer of this finance. Other sectors are.

VI. CONCLUSION

41. ADB has a focused strategy and business plan and its investments are delivering outputs and outcomes. Doing business in Afghanistan is challenging. Security will always remain a concern. But the projects being funded are essential for the economic viability of the country today and in the long run. Having a fully funded mandate is crucial for the ADB's involvement in Afghanistan.

**ASIAN DEVELOPMENT BANK AND ASIAN DEVELOPMENT FUND SUPPORT
FOR INFRASTRUCTURE DEVELOPMENT IN AFGHANISTAN: AGGREGATED SECTOR LEVEL RESULTS**

Sector	Inputs	Outputs	Outcomes
Transport	<ul style="list-style-type: none"> • ADB loans, grants, and TAs (roads, railways, airport) (\$1,293 million) 	<p><u>Roads</u></p> <ul style="list-style-type: none"> • 1,686 km of new and upgraded roads <ul style="list-style-type: none"> ▪ 447 km upgraded (Pul-e-Khumri, through Mazar-e-Sharif, to Andkhoy) and (Naibabad to Hairatan) ▪ 210 km upgraded roads (Qaisar-Andkhoy) ▪ 134 km upgraded roads (Maza-e-Sharif-Pul-Baraq-Dar-I-Suf) by end 2011 ▪ 87 km upgraded roads (Bamian-Yakawlung) by June 2012 ▪ 230 km (Qaisar-Leman) ▪ 578 km regional and national roads • Master Plans prepared • Road Authority • Road Fund (to cover all O&M costs) • Asset management system. • Training provided to staff of PMO and MPW on road engineering, procurement, contract administration, and safeguards, financial management of road projects, • Measures proposed for strengthening internal controls, keeping records, and establishing appropriate systems and procedures. <p><u>Railways</u></p> <ul style="list-style-type: none"> • 75 km of new railway line and stations between Hairatan and Mazar-e-Sharif constructed • 225 km of new railway line • Railway Restructuring Development Program • Rail Authority • Long-term Development Plan • O&M contract in place 	<ul style="list-style-type: none"> • Improved connectivity throughout Afghanistan and with neighboring countries (Around 15 million as direct beneficiaries from the upgraded roads) • More efficient and secure air transportation • New and better institutions <p><u>Specific</u></p> <ul style="list-style-type: none"> • Investments are contributing to domestic and international trade: current estimates suggest trade has increased 10 times in each of the project areas • Vehicle operating costs cut by 10–40% • Travel times cut by at least 50% • Number of buses (public transport) increased four-fold • Safety standards tightened/improved • Improved operations and maintenance • More capable staff and professional project management

Sector	Inputs	Outputs	Outcomes
		<p><u>Airports</u></p> <ul style="list-style-type: none"> • 4 airports reconstructed or renovated with new terminal buildings and widened runways • Civil Aviation Act and Oversight Manuals prepared • Training of engineers in project implementation, civil aviation staff on airport operations, and civil aviation security plan. <p><u>Cross-Border Trade and Transit Facilitation</u></p> <ul style="list-style-type: none"> • GDTTF established • Transit and Trade Facilitation Plan formulated and incorporated in the ANDS • Protocol on Cross-Border Traffic between Afghanistan and Tajikistan prepared and signed by the two governments • Protocol on Cross-Border Traffic between Afghanistan and Pakistan prepared and submitted to the government <p><u>Others</u></p> <ul style="list-style-type: none"> • Improved awareness about HIV/AIDS and human trafficking with 9,578 beneficiaries 	
Energy	<ul style="list-style-type: none"> • ADB loans, grants, and TAs (in transmission and distribution, reforms and capacity development) (\$492 million) 	<ul style="list-style-type: none"> • 164 km TAJ-Kunduz-Pul-e-Khumri 220kv transmission line installed • 194 km transmission line installed by 2015 • 241 km of distribution lines upgraded/installed by 2013 • 9 substations • Institutional development in the sector • Grid supply available in additional 8 rural towns by 2012 	<ul style="list-style-type: none"> • Energy security in Kabul and other cities across Afghanistan • Improved operational, financial, and commercial activities • Improved access to electricity by all (about 59,000 households and 3,500 small businesses connected by 2015) • NEPS system losses reduced from 50% in 2007 to 30% in 2017 • Increased sector institutional capacity, including DABS, the new electricity sector operator • New and more effective planning • Greater governance and commercialized operations

Sector	Inputs	Outputs	Outcomes
Agriculture	<ul style="list-style-type: none"> • ADB loans, grants and TAs (in irrigation and water resource management) (\$269.6 million) 	<ul style="list-style-type: none"> • Institutional strengthening and policy reforms • River bank protection—from flood/erosion • Irrigation systems modernized • Helmand Basin Master Plan prepared by 2014 • 250 upgraded irrigation canals by 2014 • Irrigated wheat yields increased from 2.0 to 2.8 tons/hectare • Strengthened institutions for water management (<i>mirabs</i>, WUAs) • Overall increase in command area from 17,900 to 32,150 hectares 	<ul style="list-style-type: none"> • More effective water and agriculture sector institutions—planning, investment programming, oversight, evaluations, reporting. • Improved reliability of the irrigation system, leading to higher productivity, production and incomes • Improved effectiveness of <i>mirabs</i> and communities to manage and provide O&M • Increased cropping intensity and yields for second season horticulture • Increased income generating opportunities for rural women and landless • Better produce quality standards and higher trade as a result

ADB=Asian Development Bank, AIDS= acquired immunodeficiency syndrome, ANDS= Afghanistan National Development Strategy, DABS= Afghanistan Electricity Corporation, GDTTF= General Directorate of Transit and Trade Facilitation, HIV = human immunodeficiency virus, km=kilometer, MPW= Ministry of Public Works, NEPS= North east Power System, NVDA=Nangarhar Valley Development Authority, O&M= operations and maintenance, PMO= Program Management Office, TA = technical assistance, TAJ=Tajikistan, and WUA=water users association.

Note: In cases when no actual outputs (as of date) are available, planned outputs (based on RRP) are used.

**ASIAN DEVELOPMENT BANK-ASIAN DEVELOPMENT FUND SUPPORT
FOR INFRASTRUCTURE DEVELOPMENT IN AFGHANISTAN: PROJECT LEVEL RESULTS**

Sector	Inputs	Outputs	Outcomes	Notes
<p>Transport Roads</p>	<p>L2140-AFG: Andkhoy-Qaisar Road Project (\$82.5 million). (Completed)</p>	<ul style="list-style-type: none"> • 210 km rehabilitated: <ul style="list-style-type: none"> ▪ Qaisar-Almar=55 km ▪ Almar-Shin-Taghab=70 km ▪ Shin-Taghab-Andkhoy=85 km • Staff trained: 4 trainee engineers, 3 PIU engineers, 2 project managers 	<ul style="list-style-type: none"> • Every single community along the corridor connected to the road. 800,000 people along this corridor have already benefited from this project. Preliminary indications suggest that trade increased by 10 times. Other outcomes already validated are: traffic risen from 196 vehicles per day in 2004 to 1691 vehicles per day in 2010; travel times cut from 9 hours to 3 hours; vehicle operating costs reduced by 10% for motorcycles, for buses and cars by 41%; bus fares cut by 50%. Many new businesses were created along the corridor (number not yet confirmed). The road has also improved regional connectivity. 	<p>These investments represent various sections under the so-called Ring Road.</p> <p>The ADB approach has been to work on the main road network before moving into the rest of the intermodal systems. The ring road is the most important and visible project in the sector. It connects towns and villages. It also connects Afghanistan to the rest of the region. The ring road is the only way Afghanistan can become a transit country for others. This will generate fees, but also investments in logistics, manufacturing and trading. The ring road and the railway after that is the only means to export minerals—a key priority over the longer run. It is also the artery to take agricultural produce to regional markets.</p>

Sector	Inputs	Outputs	Outcomes	Notes
Transport Roads	L1997-AFG: Emergency Infrastructure Rehabilitation and Reconstruction Project (\$150 million) (Completed)	<ul style="list-style-type: none"> • 447 km of road reconstructed and rehabilitated: <ul style="list-style-type: none"> ▪ 392 km (Pul-e-Khumri, through Mazar-e-Sharif, to Andkhoy) ▪ 55 km (Naibabad to Hairatan) 	<ul style="list-style-type: none"> • 2 million beneficiaries with access to the roads • Traffic risen from 1504 vehicles a day in 2003 to 2200 by 2008. • Public buses travelling on the road increased from 91 in 2004 to 180 in 2008 • Travel time cut from 14 to 6 hours • Vehicle operating costs cut by 10% • Trade increased 10 times (estimate) 	
Transport Roads	G0012-AFG: Qaisar-Bala Murghab Road (\$55 million) (Completed)	<ul style="list-style-type: none"> • 20 km rehabilitated 	<ul style="list-style-type: none"> • 100,000 people connected to the roads. Other indicators not yet known. 	
	G0081-AFG: Road Network Development Project 1 (\$176 million) (Ongoing)	<ul style="list-style-type: none"> • 210 km constructed 	<ul style="list-style-type: none"> • The project expected to benefit 2 million people directly but the entire country indirectly. It will bring down vehicle operating costs by as much as 20%. It also cut travel times by more than 7 hours from the current base of 15 hours or more in the corridor areas. Public transport will increase fourfold and all areas currently not passable will cease to be so. Trade will increase 15 fold. • The access to markets and social services will benefit communities along the corridor and beyond. 	G0012-AFG and G0081-AFG have been repackaged with G0244-AFG (approved in Dec 2010) to cover the whole Qaisar to Laman road; the remaining 230 km uncompleted section of Ring Road. A Project Management Supervision Consultant (PMSC) has been awarded a contract (\$500 million, fixed price and fixed delivery period) and procurement of the civil works contractor is at a highly advanced stage. This is the most recent
	G0244-AFG: Road Network Development Investment Program – Tranche 2 (\$340 million) (Ongoing)			

Sector	Inputs	Outputs	Outcomes	Notes
			<ul style="list-style-type: none"> • Increased local employment from construction contract. Better living conditions through investments in basic infrastructure and services to be funded by a community fund. Local youth will receive specialized training in construction and materials handling. 	<p>ADB installment in the transport sector. The MFF will finance roads and rail sections and establish special institutional and funding arrangements for O&M.</p>
<p>Transport Roads</p>	<p>L2257/G0054-AFG: North South Corridor Project (\$118.2 million)</p> <p>(Ongoing)</p>	<ul style="list-style-type: none"> • 221 km constructed <ul style="list-style-type: none"> • Mazar-e-Sharif Pul-e-Baraq Road Section (75 km, contract 1) was about 95% completed with full completion expected by December 2011; Pul-e-Baraq to Dar-I-Suf • Road section (59 km, contract 2) was about 50% completed with full completion expected by December • Bamiyan Yakawlung Road Section (87 km, contract 3) was about 88% completed with full completion expected by 30 June 2012. • Improved awareness about HIV/AIDS and human trafficking • Cross border facilities for trade 	<ul style="list-style-type: none"> • 4 million people expected to benefit directly from this investment. Trade will increase tenfold. Travel times will be reduced by 50% (7 hours on average). Cross border facilities already installed in Pakistan border. • Better health of the road users and communities through introduction of road safety and health and HIV components. This has strong gender content. 	

Sector	Inputs	Outputs	Outcomes	Notes
Transport Roads and Railways	G0261-AFG: Transport Network Development Investment—new MFF for \$800 million – Tranche 1 (\$189 million) (Ongoing)	<ul style="list-style-type: none"> • The total MFF: 578 km of roads rehabilitated • 225 km of rail lines constructed • A road fund • A road authority • A rail authority • An asset management system • People in the ministry of public works trained in planning, budgeting, project management, safeguards, financial management, and oversight and evaluations. 	<ul style="list-style-type: none"> • A total of 15 million people will benefit from this program. Trade will increase by 10 times in the project areas. Connectivity to the mining projects will be established, leading to high value exports. Vehicle operating costs will be cut by 20% and travel times reduce by 50% (depending on the areas). Employment generation will be increased by at least 30%. 	
Transport Railways	G161-AFG: Hairatan-Mazar-e-Sharif Railway Project (\$152.5 million) (Completed)	<ul style="list-style-type: none"> • 75 km of new railway line and stations between Hairatan and Mazar-e-Sharif constructed and operated by December 2011 	<ul style="list-style-type: none"> • This project will benefit the entire country. The trade volumes expected from this investment runs into 5 million tonnes a year at full capacity. The project has high regional content and is the first phase of other phases required to develop a rail network in the country. 	It is the first ever railway constructed in Afghanistan and it will link its main dry trading port at Hairatan with the second largest city in the country. The railway creates a new intermodal transport system, linked to the new airport at Mazar. The next phase will connect Mazar to Bamian and the third one Mazar to Andhoy. The Hairatan to Mazar- e-Shariff service has an O&M contract in place. Government budget allocations to this are relatively small. Funding has been provided by ADB. The rail system when expanded will not require the same level of subsidy as it does now. A 75 km line cannot

Sector	Inputs	Outputs	Outcomes	Notes
				operate profitably unless it carries high value special cargo. A 200 km line provides the basis for a break-even scenario or even significant profits. This is why new sections are envisaged over the short term.
Transport Airports	L2105-AFG: Regional Airports Rehabilitation Project—Phase I (\$30 million)	<ul style="list-style-type: none"> • 4 airports refurbished and modernized. • Airport security system improved. 	<ul style="list-style-type: none"> • Increased mobility and efficiency in the transport network • Improved security and access 	
Operations and maintenance (O&M)	Maintenance outlays will increase over time, but not for the first five years after completion. The average asset life is 20 years for roads and 30 years for rail. The required budget for maintenance is estimated at 7% of the base investment cost. This represents potentially a burden on the budget. However, ADB is putting in place a road fund which will accommodate this 7% requirement. It is expected that this fund will increase up to \$140 million annually. This will cover the needs under all current road investments. The ADB financed road sections require \$80 million a year. In the case of rail, the O&M contract is already financed for at least the next 5 years. ADB is providing funding for this purpose (a management contract has been put in place).			
Energy Electricity transmission and distribution program	L2165/G0004-AFG: Power Transmission and Distribution Project (\$50 million). One section covers Kunduz and the other the east of Kabul. (Ongoing)	<ul style="list-style-type: none"> • The transmission network expanded by about 114.1 km (54 km double circuit and 60 km single circuit) in the project areas by 2012 • 6 substations in project areas by 2012 • Grid supply available in additional 8 rural towns by 2012 	<ul style="list-style-type: none"> • The expected outcomes: increased energy security in the project areas and the country—through imports and the expansion is the number of connections. At the end of this investment, close to 100,000 people in the north and eastern areas will benefit from electricity arising from supplies 24 hours a day. Currently none of the households in the project areas have access to electricity. The project is modular and can be expanded to reach 5 million people over 	

Sector	Inputs	Outputs	Outcomes	Notes
		<ul style="list-style-type: none"> • Transmission and distribution lines erected to connect 10,320 new households by 2012 (per BOQ of the turnkey contract) • All outputs will be completed by June 2012 	<p>time.</p> <ul style="list-style-type: none"> • The investments will transform lives and help businesses. This is the result from other investments in the country. 	
	<p>L1997-AFG: Emergency Infrastructure Rehabilitation and Reconstruction Project (\$150 million)—Power Transmission Line from Uzbekistan</p> <p>(Completed)</p>	<ul style="list-style-type: none"> • 241 km of North East Power systems (NEPs) (50% of the total NEPs system). • 3 new substations 	<ul style="list-style-type: none"> • 24 hour electricity supply to the population in Kabul (almost 3 million people benefited so far and many businesses and institutions). Before the transmission line was built, Kabul had only 2 hours of electricity a day. • The project also benefited activities in social sector. Institutional centers, schools and hospitals now have energy throughout the year. Besides helping people in Kabul, the project has also benefited another 0.5 million people elsewhere—this is because the transmission line passes other cities in the country before it reaches Kabul. 	<p>This is the first regional project of its kind in the sector, the most visible and transformational project in the sector in the country. It has reduced pollution (replacing diesel generators) and increased energy security. It is a unique example of cooperation between two CAREC countries. It is now spearheading other similar operations in the region and with Afghanistan. The project involved other partners (India and USAID) and is a model operation reinforcing the ADB strategy: focus first on imports and then on domestic production sources. Another similar line has been constructed from Tajikistan and a third one is under discussion with Turkmenistan. The project reinforces CAREC as a central theme in ADB's work.</p>

Sector	Inputs	Outputs	Outcomes	Notes
Energy Electricity transmission and distribution program	L2304-AFG: Regional Power Transmission Interconnection (\$47 million) (Completed)	<ul style="list-style-type: none"> • 220 kv switchyards in Kunduz and Baghlan • 164 km TAJ-Kunduz-Pul-e-Khumri 220kv transmission line 	<ul style="list-style-type: none"> • Increased energy security and energy trade. • Annual exports from Tajikistan to Afghanistan expected to reach 500 Gwh at peak (valued at close to \$20 million as a benefit to Tajikistan). This trade represents about 20% of total electricity usage in Afghanistan. The cost of this energy is one of the lowest in the market—it is based on summer surplus hydropower production (clean energy). This operation at full capacity will add to the supply base in the country and benefit 2 million people and many businesses. The project also fosters once more regional cooperation and integration. It is the second regional project in the power sector within the CAREC program. 	Project commissioned and now working. Outcomes will be monitored and reported over time. An effectiveness and impact evaluation report will be commissioned to describe in greater detail the outcome and impact. The project would not have been possible without a regional set aside under ADF.
Energy Energy sector development	G0134-AFG: Energy Sector Development Investment Program (\$600 million) - Tranche 1 (\$164 million) (Ongoing)	<ul style="list-style-type: none"> • Gas flow production increased to 900,000 cubic meters per day by 2015 • 70 km transmission line installed from Kunduz to Taloqan by 2015. • 20kv and low voltage networks for 59,000 households and 3,500 small businesses in Kunduz and Baghlan cities. • At least 7,500 customers in Baharak and Jurm Districts are supplied by Baharak HPP 	<ul style="list-style-type: none"> • The overall outcome of the program: a more efficient, reliable and cost-effective electricity network. • Once the first wave of investments is completed, these will benefit more than 0.5 million people in each of the project areas. The second generation of investments will benefit another 0.5 million. None of the areas have electricity at the moment. The supplies will be mostly hydro based, meaning that the cost 	This program was defined a few years ago and the first tranche is just now entering the contract award stage. Future investments in the distribution and transmission network are being designed and will be awarded in 2012.

Sector	Inputs	Outputs	Outcomes	Notes
		<p>by 2015</p> <ul style="list-style-type: none"> • DABS in operation and maintenance of the new transmission and distribution systems supported • Policy reforms and project management • Training programs at DABS and MEW. 	<p>will be low, clean and affordable to consumers. Energy will be supplied mostly from Tajikistan and Uzbekistan.</p> <ul style="list-style-type: none"> • The project will also explore the potential for gas supplies in Shebarghan. This will be one of the biggest domestic generation operations under the ADB sector strategy. Several wells will be developed, followed by investments in the transmission system at a later stage. • On the softer side, the program has already shown some outcomes: (i) the establishment and corporatization of a new electricity company (DABS). This is a spin off from the ministry of water and power. The company is operating on a full commercial basis; and (ii) greater efficiency and performance of DABs through regular staff training on planning, modeling, investment programming, project management and financial control. 	
<p>Energy Energy sector development</p>	<p>G0184-AFG: Energy Sector Development Investment Program—Tranche 2 (\$81.5 million) (ongoing)</p>	<ul style="list-style-type: none"> • 60.000 households connected (0.5 million people) • New transmission line (10 km) and transmission substation 	<ul style="list-style-type: none"> • Additional energy security and effectiveness at the level of DABS. About 0.5 million people and businesses to benefit from the expansion of the network in Kabul alone 	

Sector	Inputs	Outputs	Outcomes	Notes
		<ul style="list-style-type: none"> • Further support to DABS 	<ul style="list-style-type: none"> • Increased electrification from 20% today to 30% by 2016. In Kabul electrification will increase from 36% at present to 45%. 	
Operations and maintenance (O&M)	<p>The average requirement for maintenance in energy projects is about 3%-4% of the original capital cost base. Cost recovery will not be a problem in Afghanistan if DABS operates on a commercial basis. This is the case at the moment. DABS is collecting revenues quite efficiently and on a timely manner, and these revenues are more than enough to address all the maintenance needs of ADB and other donor projects in years to come. The company has already been setting aside funds for this purpose.</p> <p>Further, most of the investments have a long economic life and the majority will not require major outlays on maintenance in the short term—at least not in the first 5 years after the completion of the projects themselves. Lastly, investment in electricity generates far-reaching benefits to the economy, and higher welfare to millions of people.</p>			
Future investments	<p>The on-going MFF in the energy sector will invest in new facilities and rehabilitate old ones. It will also invest in institutions across the country. Upcoming investments include a new project in Helmand, an investment undertaken jointly with the UK Government. It also includes the expansion of the distribution system in all major cities. This is the only means to ensure coverage and outcomes. At a later stage, the MFF investments will pursue investments in domestic power generation. Hydro power, gas and renewable are all in the agenda.</p> <p>A larger and far more ambitious project likely to affect Afghanistan is the regional gas transmission line from Turkmenistan-Afghanistan-Pakistan-India (TAPI). ADB acts as the secretariat to the four parties. This project is large and long term. Steady progress is being made at the moment with pricing agreements and offtakes completed during November 2011. The next phase is to find a gas pipeline operator. ADB has been asked to act as the project's transaction advisor. Were this project to materialize, the problem of energy security in Afghanistan would be a thing of the past. The same might apply to Pakistan.</p>			
Softer investments	ADB has made major inroads into the policy, reform and capacity building agenda.	<p>Key outputs being delivered:</p> <ul style="list-style-type: none"> • An inter-ministerial commission on energy established— to help define and then bring about reforms. This includes the creation of DABS, the first corporatization in the sector • The draft energy component under the Afghan National Development Strategy—this has provided logic and clarity to priorities in the short, medium and long term 		

Sector	Inputs	Outputs	Outcomes	Notes
		<ul style="list-style-type: none"> • A national energy policy—a key pre-condition for investment • A gas sector regulatory framework defined—exploring domestic energy sources • A reform program developed to restructure MEW and MoM—a means to improve institutional effectiveness and transparency • Policy scheme for investment cost recovery—a means to reduce budget allocations • Framework for private sector investment in energy • Strategy for renewable energy—a major step to improve the energy mix • DABS staff trained • Asset management program—a means to ensure sustainability. 		
Agriculture Rural development and reforms, including institution building	L2083-AFG: Agriculture Sector Program (\$55 million) (completed). This is budget support. Finance approved against a matrix of reforms rather than project targets. This loan was a precursor for others in the sector.	<ul style="list-style-type: none"> • Special capacity building and training programs for the Ministries of Agriculture, Irrigation, Livestock (MAIL), Energy and Water (MEW) and Rural Rehabilitation and Development (MRRD). Focus on planning, investment programming, project management and policy formulation. Also introduced ADB policies and procedures, including those on financial management, 	<ul style="list-style-type: none"> • More effective institutions, including their ability to plan, program investments and ensure oversight. The program also introduced new management information systems, essential for greater transparency, as well as tracking and reporting on results. Staff training raised skills and confidence, especially among the younger and less experienced officers. 	SOE restructuring included the Afghan Fertilizer Trading Company and Improved Seed Enterprise but not the Helmand Valley Construction Company due to the ongoing conflict. This program as a whole created the basis for future interventions in the sector. It also generated information for ADB to formulate a new and more

Sector	Inputs	Outputs	Outcomes	Notes
		<p>safeguards, procurement and policy formulation. Training on site and abroad.</p> <ul style="list-style-type: none"> • Developed a Water Law and Land Management Law—to improve land titles, essential for agriculture financing (security) and inclusiveness (access to opportunity) and environmental standards. • SOEs restructured—to cut the fiscal burden on government and expand the private sector 	<ul style="list-style-type: none"> • Budget cut and increased profile of the private sector in agriculture and agro-processing resulting from the sale of public companies. • Agricultural commodity markets—to increase trade, efficiency and transparency. However, access to finance in the rural sector has remained a constraint. Another project is now looking at this issue. • Improved produce standards. This is supporting trade and exports. • Environmental Law passed and a National Environmental Protection Agency established. This has added best practice concepts to the way investments and water management in particular can be handled in the country as a whole in years to come. • The legal structures on land and water improved, creating a better basis for investment and funding security. 	<p>concise strategy, focusing on water and water management and credit—leaving rural development and on-farm agricultural support to other donors with more and better experience in the sector.</p> <p>MEW required major restructuring. This involved spinning off some major tasks, including energy operations.</p>
<p>Agriculture Agricultural production and markets—large projects</p>	<p>G-0126-AFG: Agricultural Market Infrastructure Project (\$30 million)</p> <p>(Ongoing)</p>	<ul style="list-style-type: none"> • 5 new slaughterhouses • On farm facilities for produce sorting, packing and handling • Fresh produce standards established • Market information systems • Quality control laboratories 	<ul style="list-style-type: none"> • The project is under implementation. The target outcomes: (i) increased trade in fresh horticultural produce, (ii) higher health and safety standards in the city of Kabul and elsewhere, (iii) more affordable and efficient meat 	<p>This is a critical investment that arose out of a pilot scheme funded under the Japan Fund for Poverty Reduction (JFPR) in Bamian and three other provinces. The JFPR supported potato storage</p>

Sector	Inputs	Outputs	Outcomes	Notes
		<ul style="list-style-type: none"> Project management and training of staff 	<p>and livestock slaughtering services, and (iv) better access to services, health, quality and lower transaction costs across the board. The project has gender and private sector content, with specific measurable targets.</p> <ul style="list-style-type: none"> The second part of the project is already working and has delivered better produce handling techniques and better facilities for perishable produce. This will cut post-harvest losses by 50%, raise incomes by 20%, expand trade by 30% and provide a model for other farming communities. Better sorting, packing and storage facilities are a must for effective and efficient commodity trading. 	<p>and quality standards across the chain, benefiting some 1.1 million people in the project area. This new project is expected to deliver similar impressive results.</p>
<p>Agriculture Small scale irrigation and rural development —small projects</p>	<p>JFPR 9100-AFG: Afghanistan Rural Business Support Project (\$18 million) (Completed)</p>	<ul style="list-style-type: none"> Potato yields of cooperative farmers in project is 26 t/ha compared to 21 t/ha for non-cooperative member farmers 1100 potato storages constructed Losses reduced from 40% to 1.1% Potato farmers income increased by \$3.2 million 13,000 direct beneficiaries from potato storages and training 	<ul style="list-style-type: none"> Reduction in potato losses from 40% to less than 1 percent is an outstanding achievement. The result is more income per unit (up by 40%) Increased income is also accruing from crop loss reduction but also better standards and prices in the market place. 	

Sector	Inputs	Outputs	Outcomes	Notes
	<p>JFPR 9039-AFG: Rural Recovery through Community Based Irrigation Rehabilitation (\$5 million)</p> <p>(Completed)</p>	<ul style="list-style-type: none"> • 74 traditional small-scale irrigation schemes rehabilitated at \$3 million • 110,200 man-days of short-term employment generated • Financial impact of short-term employment \$1.1 million 	<ul style="list-style-type: none"> • 1.1 million people (185,000 households) benefited from the irrigation scheme. This is impacting on productivity (up by 30%) and water management. The end result will be more production and incomes (rises in the order of 20%). 	<p>Program was a pilot and then was mainstreamed under the stand-alone investment in agriculture described above. Similar projects are to follow.</p>
<p>Agriculture Water-based natural resource management</p>	<p>L2227-AFG: Western Basins Water Resources Management (\$75 million)</p> <p>(Ongoing)</p>	<ul style="list-style-type: none"> • A new water basin model to predict better water flows and water management conditions and requirements • Improved small scale irrigation facilities—across the system, the aim being to help farmers shift from rain fed agriculture into new crops • Capacity development <p>Project will be completed in 2015. Outputs are however being delivered late and at a higher cost than anticipated. Security problems delayed implementation, especially the irrigation component.</p>	<ul style="list-style-type: none"> • Expected outcomes: higher agricultural production through increases in productivity, more predictable water flows and better access to water by more farmers. • The project expected to benefit at least 2 million people, and productivity in the area farms to rise by much as 35% in the case of wheat—the main crop. This productivity increase should translate into a 20% increase in incomes. 	<p>This is the first generation of ADB irrigation projects. Implementation has been a challenge. Contracts are relatively small and contractors tend to be local and short on capacity. The operation has required high levels of ADB attention, making it costly, albeit also hopefully effective. Security concerns have derailed the implementation schedule.</p>
<p>Agriculture Water-based natural resource management</p>	<p>G0167/0170-AFG: Water Resources Development Investment Program—6 year program</p> <p>Tranche 1 (\$86.6 million) approved in 2009</p> <p>(Ongoing)</p>	<ul style="list-style-type: none"> • Traditional and modern irrigation infrastructure rehabilitated/upgraded in the north and north east of the country (about 250 upgraded irrigation canals)—major production areas • Flood & bank erosion protect works across various production areas—to increase 	<ul style="list-style-type: none"> • The program expected to create a more efficient, productive and resilient agricultural sector—a sector capable of producing higher quality crops during longer periods, more jobs and higher incomes. The program will also improve the way institutions work, and refine 	<p>This program represents the new ADB strategic compact in the sector. Our focus on water and water management is driven by work showing this to be a serious gap. Water as a key factor behind higher production (food security), productivity (efficiency)</p>

Sector	Inputs	Outputs	Outcomes	Notes
		<p>resilience</p> <ul style="list-style-type: none"> • Agriculture and irrigation ministry staff trained and improved institutions function and results reporting—staff trained on planning, investment programming, oversight and project management • A Helmand basis master plan—a joint venture with the UK Government <p>• Overall increase in command area from 17,900 to 32,150 hectares</p> <p>The program is only now beginning to be converted into specific investments (to generate outputs). ADB is putting in place project management teams and has just approved the first wave of subprojects under the first tranche. Outputs and outcomes are not yet available.</p>	<p>the policy and legal frameworks to encourage investment and trade.</p> <ul style="list-style-type: none"> • Irrigated wheat yields increase expected from 2.0 to 2.8 tons/hectare • Another goal is to deal with water and water resources in a more productive and environmentally effective manner, leading to more conservation rather than waste and to a shift away from rain fed agriculture 	<p>and crop diversification (income resilience). The current irrigation system is obsolete and inefficient. Improving this network will make a major difference to agricultural communities. The focus on water is offset with a lower involvement in direct farm activities. Other institutions have a better track record in this area. Close coordination with them is leading to complementary investments.</p>
<p>Operations and maintenance—indicative data for the investments</p>	<p>Each project will require maintenance and repairs at a certain point in the future. Asset management and sustainability will depend on doing this work well. The budget requirement for this maintenance work is estimated to range from 1% to 2% of the original base cost (capital expenditure). Most of the allocations for this will come from the budget. In some cases, however, farmer associations are also likely to contribute to the funding, in the majority of cases in kind (labor). But in general, it is fair to assume that the central budget will be the main source of finance. Maintenance investments therefore place a relatively small future burden on the budget. However, given the expected benefits from these investments, the cost of maintenance will always be more than justified by the greater food security, greater production for the domestic and export markets, greater productivity, more jobs, income and general rises in people welfare in the rural and other areas. Further, the maintenance outlay arises only after the fifth year of the operations being completed (i.e. post project completion). In addition, several donors have been making (and will most likely continue to operate) budget support finance available to the government. This is directly</p>			

Sector	Inputs	Outputs	Outcomes	Notes
	and indirectly another source of finance. The worst case scenario with regard to maintenance is not the amount of budget funding itself but the risk of not investing. ADB has a long term partnership in the sector, backed by the MFF. Allocations for maintenance can thus be watched and enforced.			
Soft investments	<p>The ADB involvement with institution building in the agriculture and irrigation sector has been intensive, especially with regard to the two ministries most active in the sector. Training has been effective. However, one area that will require greater attention in future is policy reform and access to credit. The latter is limited. ADB is exploring with the United States Treasury Department a program to evaluate the conditions and requirements to increase the presence of banks in the rural areas. Agribusiness will be the mainstay of the Afghan economy for years to come. Access to finance will be a determinant factor behind success or failure.</p> <p>Finally, the sector has gaps in relation to extension services. Current services are deficient, especially with regards to best practice. This becomes especially important in the context of crop diversification.</p>			

ADB=Asian Development Bank, ADF= Asian Development Fund, AFG= Afghanistan, CAREC=Central Asian Regional Economic Cooperation, DABS=Da Afghanistan Breshna Sherkat, JFPR= Japan Fund for Poverty Reduction, km=kilometer, MEW= Ministry of Energy and Water, MFF=multitranches financing facility, NVDA= Nangarhar Valley Development Authority, O&M= operations and maintenance, SOE= state-owned enterprise, and UK= United Kingdom.

AFGHANISTAN: SECTOR RESULTS

A. Road Sector Results

1. Country Results

1. Afghanistan, as a landlocked country in Central Asia, relies on road transport for its economic development. Road transport carries around 90% of the country's trade. The country has the potential of serving as an important transit corridor for trade between Central Asia and South Asia as well as the Middle East. However, thirty years of conflict severely damaged the road network. More than 90% of road infrastructure (totaling approximately 38,000 kilometers) was unconnected and in poor condition at the end of 2001.

2. The government has prioritized road network development, as highlighted in the Afghanistan National Development Strategy, the country's roadmap for development over 2008–2020. Development partners—including the Asian Development Bank (ADB), Japan International Cooperation Agency, United States Agency for International Development, and World Bank—have assisted the government in improving the road network through financial assistance in the amount of \$2.9 billion since 2003. Donor assistance helped improve 4,042 km of roads, or 11% of Afghanistan's road network.

3. The improved road network has contributed to economic and trade growth in Afghanistan by promoting the movement of goods and people within the country and beyond its borders. The number of registered vehicles increased from 177,357 in 2002 to 1,036,025 in 2010, an average annual increase of 25%. Between 2007 and 2010, total passenger traffic increased from 63,368 million passenger-km to 78,653 million passenger-km, and total freight traffic grew from 731 million ton-km to 909 million ton-km.¹ Afghanistan's external trade expanded from \$2.2 billion in 2003 to \$8.7 billion in 2010—an average growth of 22% annually. The improved road network, covering regional, national, provincial, and rural roads, benefited the local communities along the roads by creating job opportunities; and increasing their access to education, health, and other social services. Afghanistan's gross domestic product (measured in current price at purchasing power parity) increased from \$16.8 billion in 2003 to \$34.6 billion in 2009.

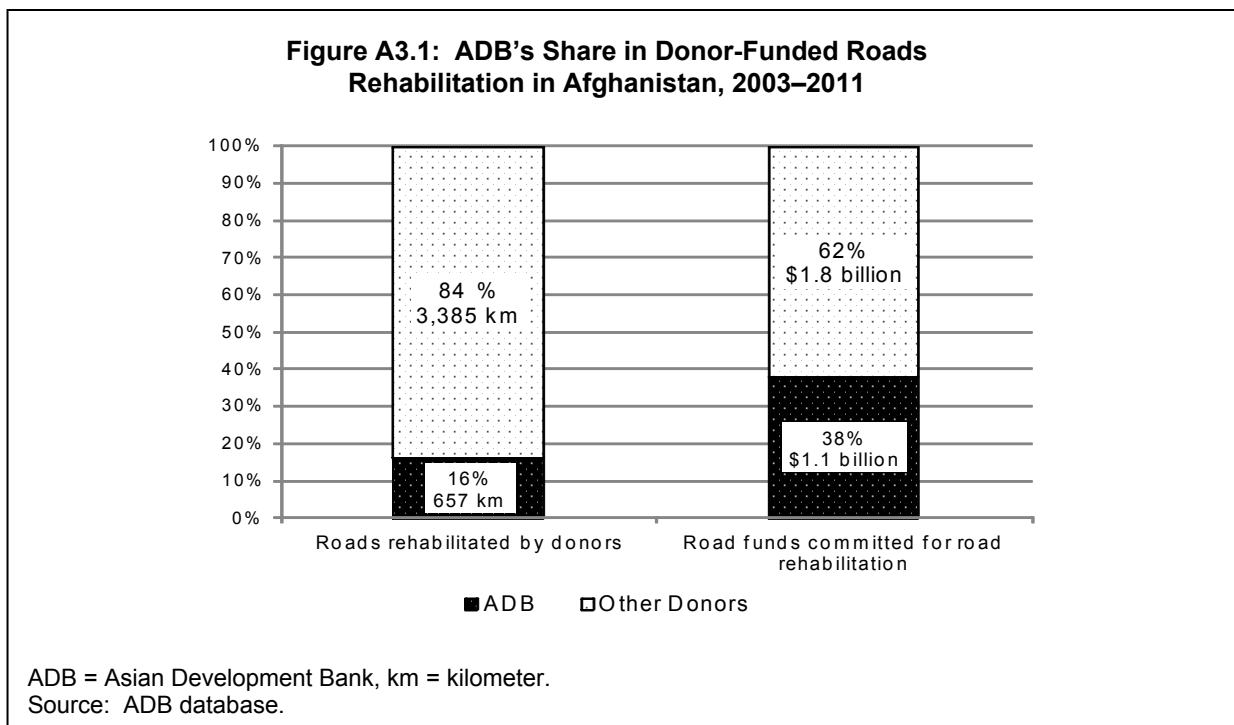
2. ADB and ADF Contribution

4. As a lead development partner in Afghanistan's transport sector, ADB financed \$1.1 billion for eight road projects during 2003–2011 (Figure A3.1). ADB support, which was entirely financed by the Asian Development Fund (ADF), accounted for 38% of the total external assistance to the road sector and 48% of the total ADB assistance to Afghanistan. ADB assistance focused on reconstructing and rehabilitating approximately 1,274 km of regional and national highways. Out of the eight road projects, two projects have been completed: (i) the Emergency Infrastructure Rehabilitation and Reconstruction Project, and (ii) the Andkhoy-Qaisar Road Project. These projects improved 657 km of the northern section of the Ring Road, which forms part of the Central Asia Regional Economic Cooperation (CAREC) Corridor connecting Afghanistan to its neighboring countries (People's Republic of China, Tajikistan, Turkmenistan, and Uzbekistan). The projects contributed to increases of traffic by 46%–76%, and reduced travel times by 130%–200%. They also provided increased mobility and all-weather access to job opportunities, markets, and social services for local communities.

¹ No passenger or freight traffic data are available for the years before 2007.

5. The Emergency Infrastructure Rehabilitation and Reconstruction Project, completed in 2008, reconstructed and rehabilitated 392 km of the road from Pul-e-Khumri, through Mazar-e-Sharif, to Andkhoy; and 55 km of the road from Naibabad to Hairatan at the border to Uzbekistan. Traffic on the project road increased from 1,504 vehicles per day in 2003 to 2,200 vehicles per day in 2008. Public transport increased more rapidly from 91 buses in 2004 to 180 buses in 2008. Travel time between Pul-e-Khumri and Andkhoy was cut from 14 to 6 hours, and vehicle operating costs decreased by 9%. The project brought social benefits to about 2 million people living along the road by providing jobs for local workers, including women, during construction and creating road-side businesses after completion.

6. The Andkhoy-Qaisar Road Project, completed in 2010, upgraded 210 km of the road between Andkhoy and Qaisar. Traffic on the project road increased from 196 vehicles per day in 2004 to 1,691 vehicles per day in 2010. Travel time between Andkhoy and Qaisar was shortened from around 9 to 3 hours in normal weather, and time savings are much higher during poor weather conditions. Vehicle operating costs were cut by between 10% for motorcycles and 41% for buses. Bus fare dropped by almost 50%, from AF530 (\$11.73 equivalent) per person in 2007 to AF270 (\$5.98 equivalent) per person in 2010. Many new social services and businesses (schools, health clinics, and markets) opened within 2 km of the project road, benefiting approximately 800,000 people in the project area.



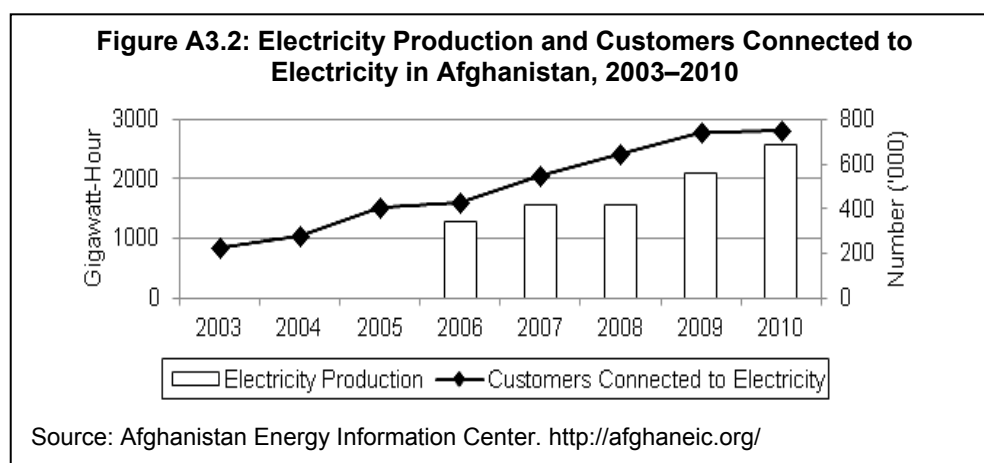
B. Energy Sector Results

1. Country Results

7. Afghanistan's power sector was left devastated by almost 3 decades of conflict that ended in 2001: only 6% of the country's population had access to electricity in 2003. Since then, the government and its development partners, including ADB and the private sector, have embarked on the reconstruction of the country's power sector. To meet the severe power shortage, it was considered essential to import electricity from its neighboring countries. During

2002–2010, the government and its development partners committed about \$3.2 billion to construct the transmission corridor, rehabilitate facilities, and provide reliable power supply.²

8. Following massive investments in power infrastructure, the number of customers that received electricity increased from 228,000 in 2003 to 753,000 in 2010 representing an increase in the electrification rate from less than 6% to approximately 20% in 8 years (Figure A3.2). Investments also covered regional interconnections which significantly increased electricity trade. The electricity supply doubled from 1,292 gigawatt-hours in 2006 to 2,584 gigawatt-hours in 2010. About 39% of the supply was generated within Afghanistan (from mainly hydro sources), and 61% was imported from the neighboring countries of Iran, Tajikistan, Turkmenistan, and Uzbekistan.



9. Despite progress, four out of five Afghans still lack access to electricity, and the country's power infrastructure requires massive rehabilitation. Continued and effective donor assistance is vital in ensuring all Afghans enjoy the benefits of a reliable and sustainable supply of electricity. Lack of reliable power is considered to be the biggest impediment to businesses, next to security.

2. ADB and ADF Contribution

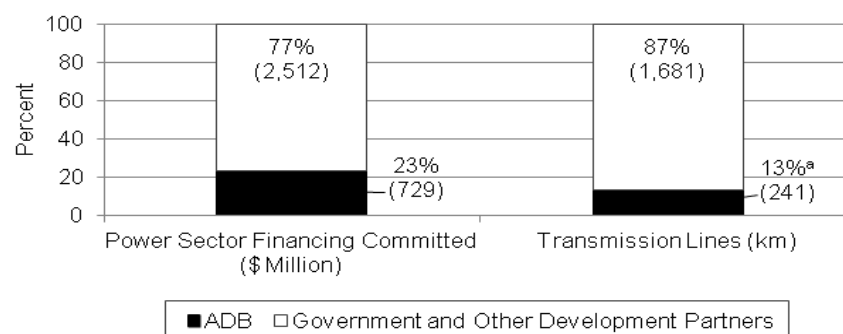
10. During 2002–2010, ADB approved \$721 million in loans and grants from ADF and \$8 million in technical assistance to rehabilitate Afghanistan's power sector.³ This accounted for 23% of the total funds supplied by the government and its development partners during the same period (Figure A3.3). Under the power component of the Emergency Infrastructure and Rehabilitation Project (completed in 2009), ADB financed the rehabilitation and construction of 241 km of the North East Power System, which accounted for 54% of the total high voltage transmission lines (443 km) and 13% of all transmission lines (1,922 km).⁴ The new and improved North East Power System allowed imports of over 100 MW from Uzbekistan, which together with domestic generation provided uninterrupted supply to the population of Kabul and other connected cities. Reliable power supply was a major contributor to economic growth and improvement in the quality of life in areas that did not receive electricity previously.

² Islamic Republic of Afghanistan. 2008. *Afghanistan National Development Strategy 2008–2012*. Kabul.

³ Loans include approved financing for the power components of one multisector program, one multisector project, and three power projects. Technical assistance includes financing from the Technical Assistance Special Fund, the Japan Fund for Poverty Reduction, and the Poverty Reduction Cooperation Fund.

⁴ The highest voltage transmission lines consist of 220-kilovolt lines.

Figure A3.3: ADB's Contribution to Financing Commitments and Outputs Delivered in the Power Sector in Afghanistan, 2002–2010



ADB = Asian Development Bank, km = kilometer.

^a Transmission lines built or upgraded by ADB-funded projects as a percentage of all transmission lines in the country in July 2011. Projects may include financing from the government and other development partners.

Source: ADB. 2009. *Project Completion Report: Emergency Infrastructure Rehabilitation and Reconstruction Project*. Manila; Afghanistan Energy Information Center; and Strategy and Policy Department.

11. Three projects are ongoing and scheduled to be completed between 2011 and 2016. The Power Transmission and Distribution Project (approved in 2005 for \$50 million) will improve and expand the distribution network and power supply in the northern and eastern areas of the country, aiming to benefit over 500,000 of the local population.

12. The Regional Power Transmission and Interconnection Project (approved in 2006 for \$47 million), which is scheduled to be completed in December 2011, will allow 500 gigawatt-hours of electricity a year to be supplied from Tajikistan to Afghanistan.⁵ The project will allow Tajikistan to export its summer surplus electricity, which would otherwise have been unused, and allow Afghanistan to improve its energy security in a cost-effective manner.

13. The Energy Sector Development Investment Program (approved in 2008 for \$570 million in multitranche financing facility) aims to expand the coverage of the North East Power System to supply uninterrupted power to both the urban and rural population in the northern area. Tranche 1 (approved in 2008 for \$164 million) is expected to rehabilitate 67 km of transmission line by 2013, benefiting about 59,000 households and 3,500 small businesses. This tranche also includes the development of a run-of-river small hydropower plant of 4 MW, serving about 7,500 more people in rural areas. Tranche 2 (approved in 2009 for \$81.5 million) will expand distribution infrastructure in Kabul, which will provide an adequate and reliable electricity supply to 60,000 households.

C. Agriculture and Water Resources Sector Results

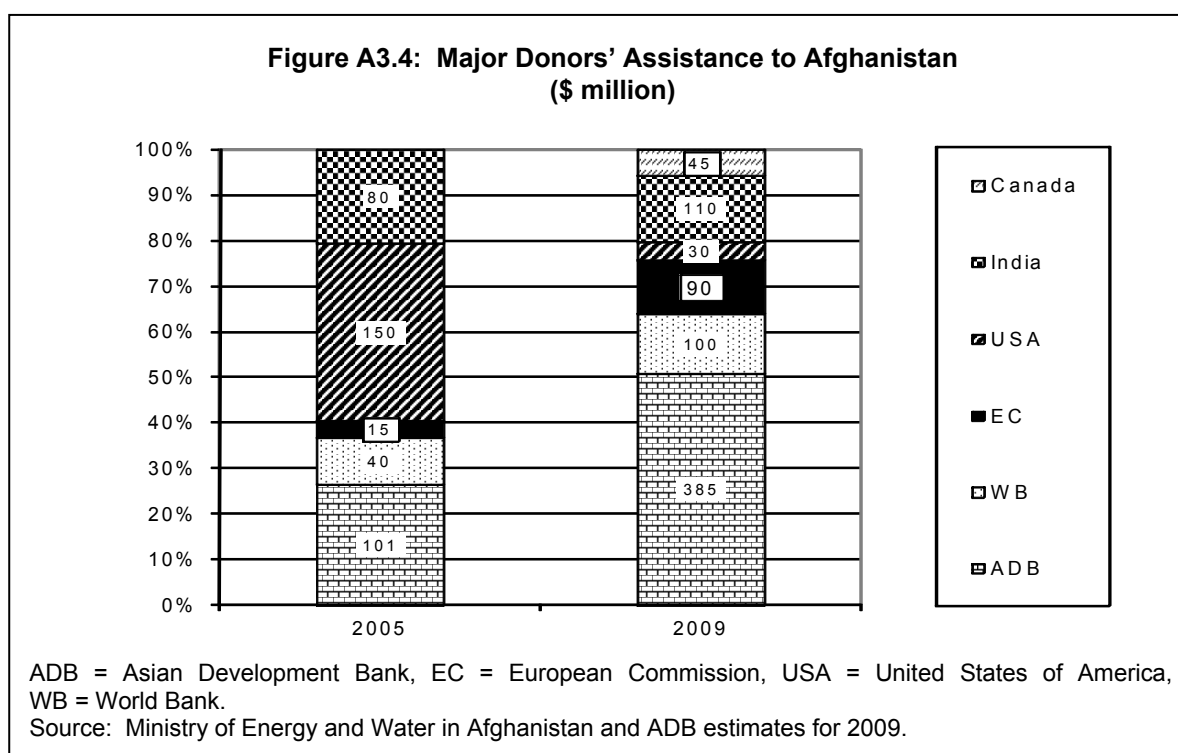
1. Country Results

14. Water resources management and irrigated agriculture are fundamental to the well-being of the national economy, the rural sector, and poverty reduction. Irrigated agriculture

⁵ Includes a \$12 million supplementary grant. The Tajikistan portion was funded by a \$21.5 million grant.

produces up to 80% of total agricultural output, with agriculture comprising between 50% and 60% of the national economy and employing up to 80% of the country's population. Farmers throughout the country have cited lack of irrigation water as the primary constraint to agricultural productivity. Developing water resources and improving the productivity of irrigated agriculture are paramount to sustaining economic growth and addressing rural poverty. Agriculture uses 95% of developed water supplies, so enhancement of irrigated agriculture must be pursued in parallel with strengthening water resources management.

15. Afghanistan National Development Strategy (ANDS) proposed an investment program for \$3,761 million for the entire water sector. The Ministry of Energy and Water (MEW) has revised the ANDS investment plan to \$2,468 million over the medium-term under the national programs for irrigation and water resources management that include: (i) Institutional Set-Up and Capacity Building Program, (ii) Water Resource Infrastructure Management Program, (iii) Bank Protection Program, and (iv) National Water Resources Development Program.



2. ADB and ADF Contribution

16. Water resources and irrigation in Afghanistan have received significant attention over the last 6 years from multiple donors, but infrastructure investment has been lower than in other sectors (e.g., roads and power). ADB, the European Commission, and the World Bank have been the three largest, most consistent donors to the sector with ongoing programs that began in 2002. During 2002–2010, ADB approved \$189.8 million in loans and grants from ADF and \$5.3 million in technical assistance to support Afghanistan's water resources management and irrigation sector (Figure A3.4).

17. The Western Basins Water Resources Management Project, approved in 2005 as a \$72 million ADF loan, is on-going and is scheduled to be completed in September 2013 with the aims at the improvement of rural livelihoods through; (i) strengthened Integrated Water

Resources Management (IWRM), (ii) improved irrigation service delivery in six irrigation canal systems, and (iii) enhanced agricultural practices to increase the productivity of irrigated agriculture in the western basins of Afghanistan (Badghis, Ghowr, and Herat provinces), mainly comprising the Hari Rud River Basin. Preliminary achievements for each outcome for the Project as of today are:

(i) Improved performance of irrigation system.

18. Considering the current status of the rehabilitation of six irrigation canal systems (26 structures and one canal section for flood protection completed, 13 and another canal section under construction, 45 to be constructed), the performance of irrigation system was partially improved and increased irrigation command area at present from 17,900 ha to 22,310 ha can be estimated. At the project completion, the total increase of irrigation command area will be 32,150 ha.

(ii) Improved effectiveness of mirabs and communities to manage and provide O&M.

19. Mirabs (who are the traditional community managers of irrigation systems and responsible for overseeing system management and operations and maintenance (O&M)) and communities are getting active and enthusiastic to participate in monitoring the rehabilitation works of irrigation systems as the works are progressed. The rehabilitation works and a series of training changed the attitude of mirabs and communities and they are careful enough to pay attention to the O&M activities now.

(iii) Improved water management by farmers at the farm level.

20. Several field training enabled farmers to measure water flow in canals and to manage irrigation water wisely. Farmers highly welcomed the installation of drip irrigation systems in three locations and decided to install additional drip irrigation systems in response to the farmers' strong willingness. At the project completion, field application efficiency of water at farm level will be increased by 15% in areas that received on-farm water management.

(iv) Improved yields of irrigated wheat and fodder.

21. As a result of training in improved wheat cultivation including pests and diseases controls, most of the wheat varieties that farmers decided to introduce outperformed the local variety with a potential of 35% increase in yields over the local varieties. At the project completion, average wheat yields of at least 2.8 tons/ha will be ensured.

(v) Increased cropping intensity and yields for second season horticulture.

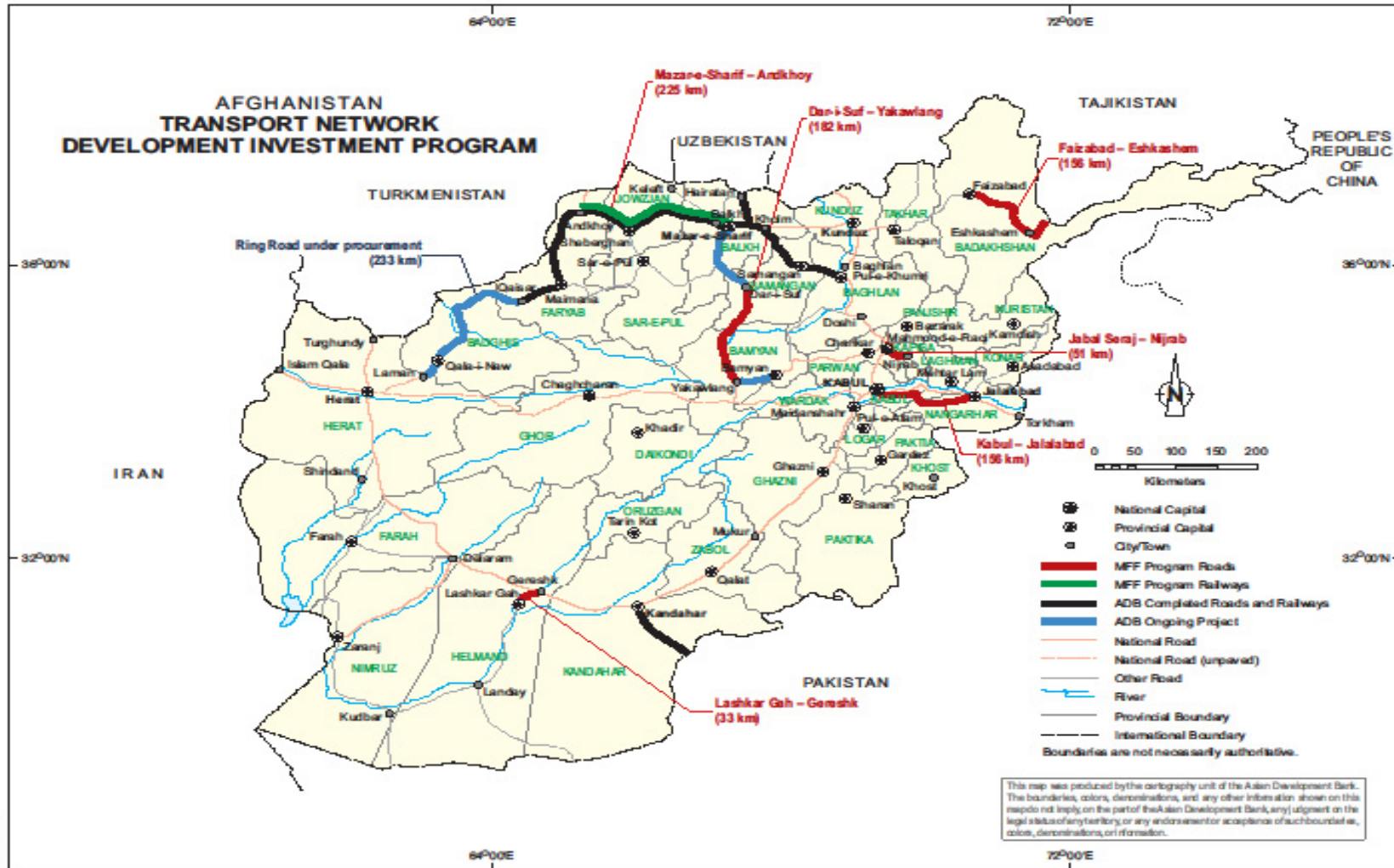
22. Sixty vegetable demonstration plots and learning sessions on production and marketing of vegetable crops enabled participating farmers to market vegetables and get twice the usual market price. Improved planting materials and provided training for grape production for 75 grape growers established good platform for others to learn new technology in grape production. At the project completion, cropping intensities will be increased by average of 300% and yields by 20% for summer season horticulture crops.

(vi) Increased income generating opportunities for rural women and landless.

23. As a result of the receipt of training to enhance agriculture development, irrigation water management skills, women's confidence (with the number of 300 at present) level has increased, their capacity of learning from each other has improved and team work developed. At the project completion, over 2,000 women have improved livelihoods from income generating activities.

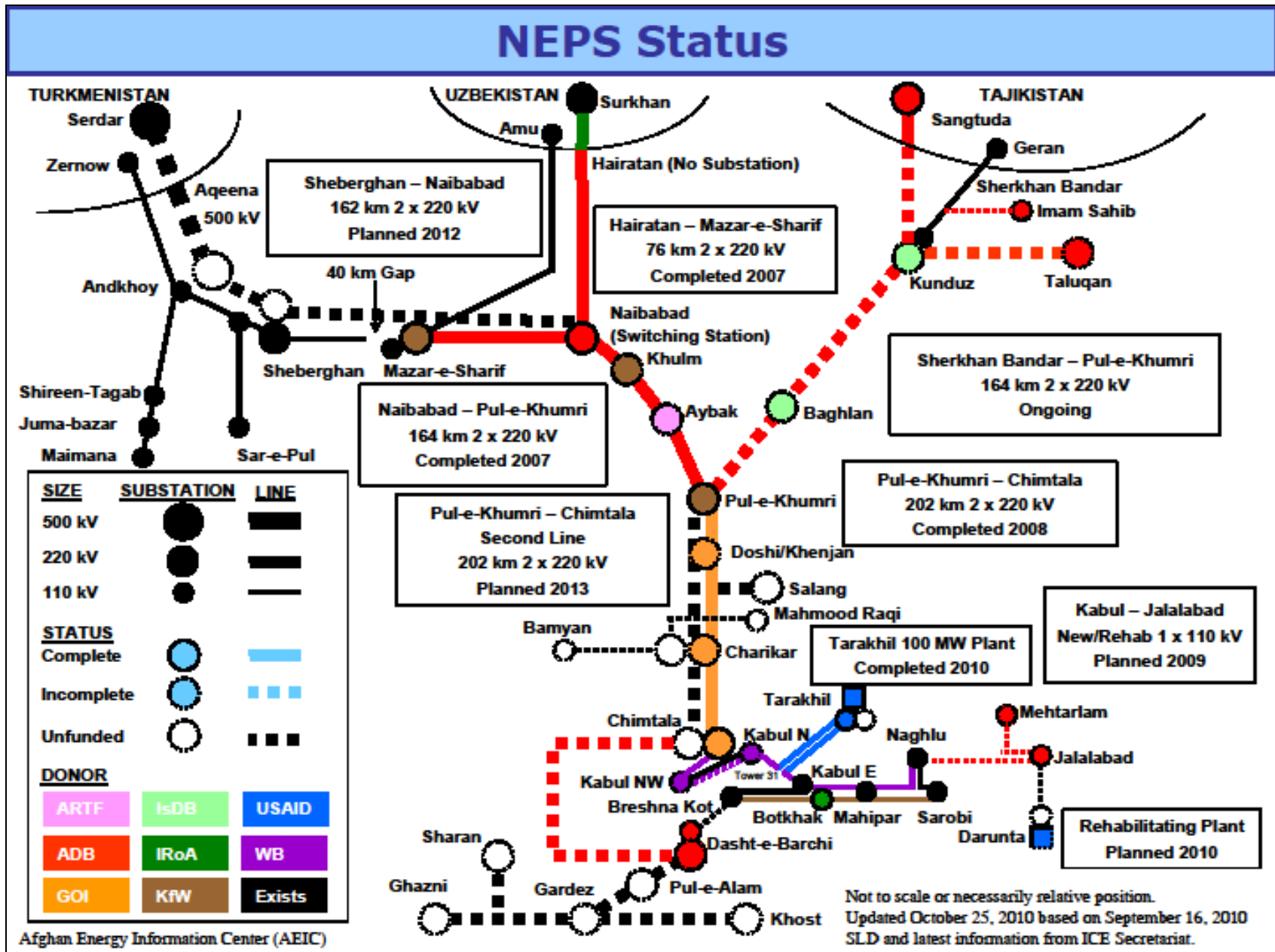
PROJECT MAPS

A. Transport



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B. Energy



C. Agriculture and Water Resources

