

3. Quality of services and users' perspective

In the context of the first phase of the transition (and to some extent even in the second phase), universal or near universal access or connection to infrastructure networks did not necessarily imply provision of reliable service of an acceptable quality. During the Soviet regime the infrastructural services were heavily subsidized, and the level of subsidies could not be sustained during transition. When such subsidies dwindled, the infrastructure entities could not maintain the reliability or the quality of service, especially in the context of low tariffs and high levels of nonpayment. Often due to lack of funds for maintenance and operation, parts of district heating networks have been abandoned and connections mean nothing in such cases. In other cases connections continue to remain but provision of service has become unreliable.

Inadequate and dysfunctional infrastructure has significant economic and social consequences.¹⁸ Loss of production and lost opportunities for productivity increases, loss of competitiveness in export markets are obvious economic consequences. Intermittent power supplies with unacceptable voltage and frequency fluctuations cause serious damage to household appliances and industrial machinery. Lack of rural all weather roads may mean not only lack of opportunity to market the farm produce, but also inability of the rural folks to access health and educational facilities.

The impact of poor quality network services fall heavily on the apartment dwellers of the capital cities and secondary cities. Use of dirty fuels for cooking and heating in the absence of clean fuels has serious health and environmental consequences. Further, the analysis of the Household Budget Surveys (HBS) and Living Standards Measurement Surveys (LSMS) indicates that the impact is most adverse on the urban poor (the lowest income quintile among urban households).

These and the impact of poor electricity and heat services on hospitals and schools have often been the substance of protests in the region (especially in CIS) in the past, but there are clear signs that things are becoming better during the second phase of transition.

Perspective of the households

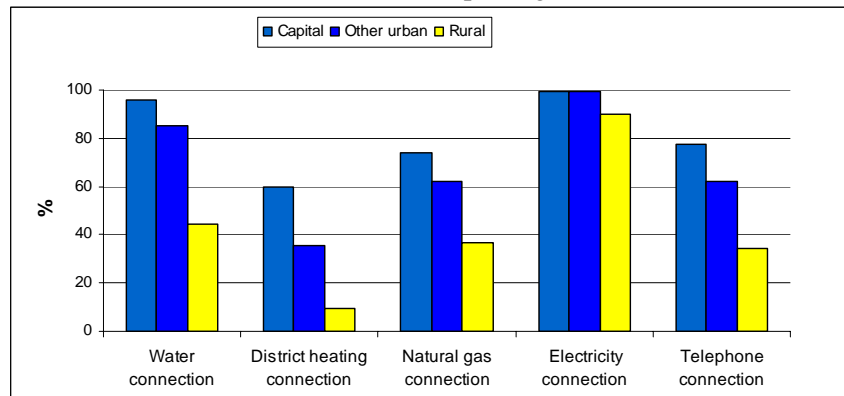
Some insight into the extent of such deterioration (and signs of recent partial recovery) is available through the Household Budget Surveys, Living Standards Measurement Surveys and a few other similar surveys periodically undertaken in the ECA countries. Based on an analysis of the surveys carried out during 1998-2002 for 20 of the countries, a set of findings emerged.¹⁹

Urban residents, who are concentrated spatially and who commonly reside in high rise apartment buildings are especially hard hit by the deterioration in infrastructure services such as water, power, sanitation, garbage collection and district heat, as (unlike their rural counterparts) they have fewer coping options. The standard claims of universal connections seem to hold well mostly only for electricity. In respect of other services such as water, district heat, natural gas and telephone appear to vary notably by location (capital cities, other urban areas and rural areas).

¹⁸ Details are summarized in Komives, Foster, Halpern, Wodon (2005)

¹⁹ This section draws from Ellen Hamilton and others, *Dimensions of Urban Poverty*, World Bank 2004

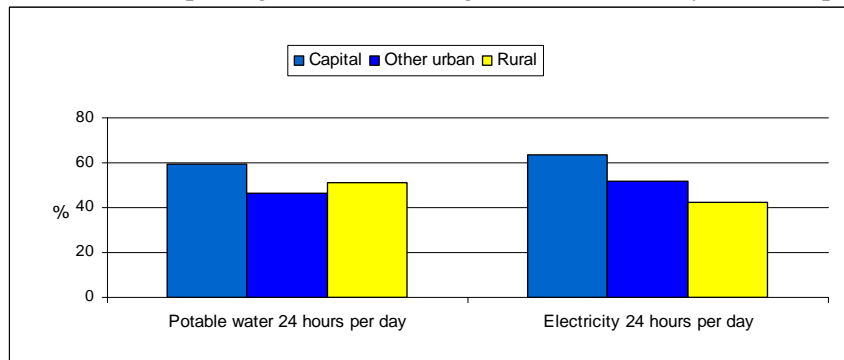
Figure 3.1: Access to infrastructure and energy services in ECA in the early 2000 by location
(% of households reporting access)



Note: Average among 20 ECA countries for water connection, 19 ECA countries for district heating and telephone connection, 15 ECA countries for natural gas, 10 ECA countries for electricity.

Furthermore, only 40% to 60% of the households report 24 hour water supply or power supply, as can be seen from the following figure.

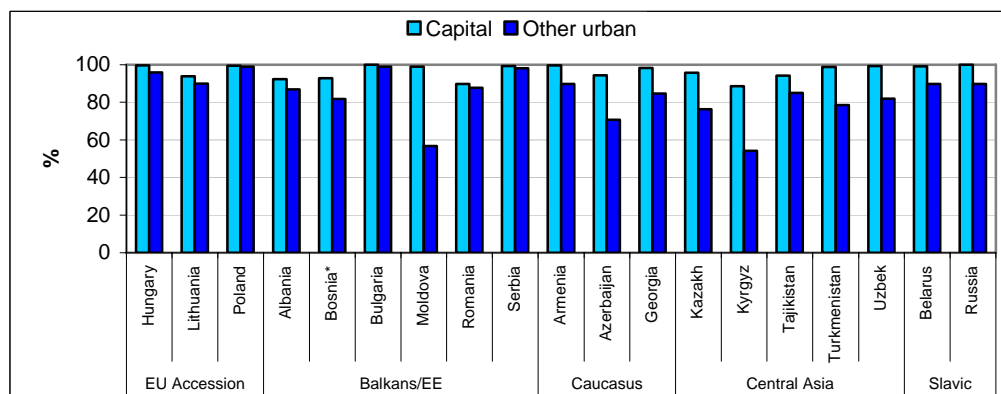
Figure 3.2: Reliability of infrastructure and energy services in ECA in early 2000
(% of households reporting access, receiving water or electricity 24 hours per day)



Note: Average among 8 ECA countries for potable water; 8 for electricity.

Water connection variations between the capital cities and other cities in several ECA countries are given in the next figure:

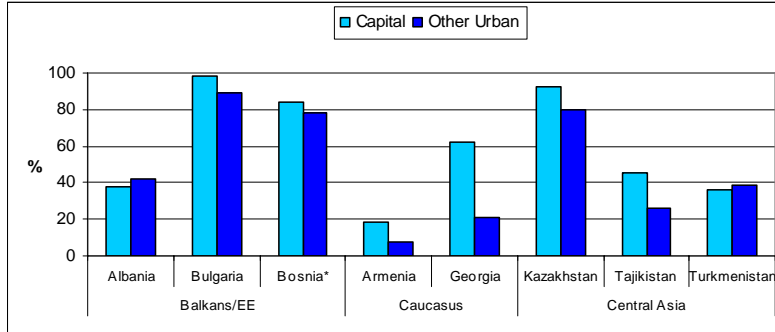
Figure 3.3: Water connection comparison in capital and other urban areas in ECA countries in early 2000



* Bosnia- urban & mixed settlements

The differences in reliability of supply between urban and other urban areas in a few ECA countries are indicated in the following figure.

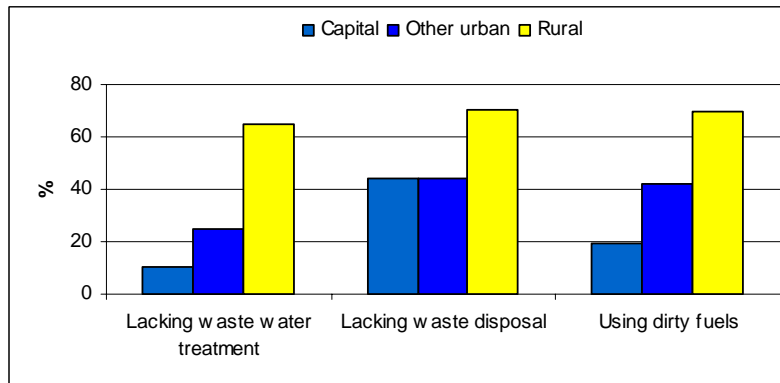
Figure 3.4: Water reliability (24 hours per day)



* Bosnia - urban & mixed settlements

Sanitation services are also not available to a large percentage of households in rural areas and other urban areas. Use of dirty fuels because of non-availability of power or gas or district heating is noted everywhere, but much more so in other urban areas and rural areas

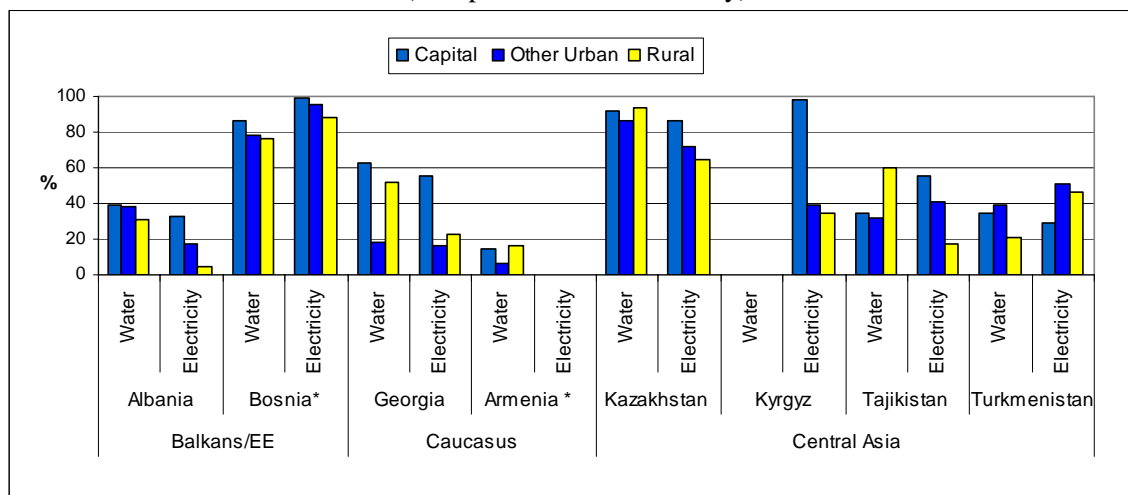
Figure 3.5: Incidence of poor Sanitation and Environmental conditions in early 2000
(% households)



Note: Average among 15 ECA countries for lack of inside toilet, 6 for lack of regular waste collection; 16 for dirty fuels.

Most people in capital and other cities are apartment dwellers and they generally have high rates of connection. But they also suffer most for lack of reliability of supply. The situation of apartment dwellers in several ECA states is captured in the next figure.

Figure 3.6: Central water and electricity 24 hours a day (early 2000)
(for apartment dwellers only)



* Bosnia urban, mixed, rural settlement.

* Armenia -electricity reliability not available.

* Kyrgyz water reliability not available

Perspective of the business community

The World Bank and EBRD have jointly conducted Business Environment and Enterprise Performance Surveys (BEEPS) in 1999, 2002 and 2005 covering most of the countries in the ECA region (including Turkey but excluding Turkmenistan). These surveys cover a wide range of businesses and in all covered 3000 enterprises in 20 countries in 1999, 6100 enterprises in 26 countries in 2002 and more than 9500 firms in 27 countries in 2005. Turkmenistan is the only country not covered by the survey. Some of the data available from these surveys present a picture of gradual improvement of the infrastructural services over time (see Annex for detailed tables).

In the 1999 survey a significant percentage of respondents considered the infrastructure services as “slightly bad, bad or very bad” (Table 3.1)

Table 3.1: Percentage of Respondents with negative Perception of Services (1999)

| Region/Sub-region | Roads | Electricity | Water |
|-------------------|-------|-------------|-------|
| ECA | 59.0 | 22.8 | 29.2 |
| CEE | 56.6 | 10.7 | 15.1 |
| SEE | 57.2 | 21.9 | 32.5 |
| CIS | 62.5 | 31.3 | 36.2 |

Source: BEEPS 1999

A much larger percentage of respondents considered the road services to be bad, followed by water services and power services. Even in CEE the road services were perceived to be bad. The situation in CIS was clearly the worst, while the level of dissatisfaction was high in SEE too, perhaps indicating the results of regional conflicts.

However when infrastructural services as a whole was considered 39.5% of the respondents in the ECA region believed that they did not present a major, moderate or even a minor obstacle to their business. The percentage of such respondents was higher in CEE at 46.3% and lower in CIS (38.8%) and SEE (32.5%).

Scarcity and bribes go hand in hand. Another statistic indicates that a very significant percentage of respondents (76.3%) in the ECA region did not allocate more than 10% of the total bribes they paid for getting new connections to public services. This percentage was highest in CEE (85.7%) followed by CIS (77.6%) and SEE (62.9%).

That infrastructural services improved during 1999 to 2002 could be discerned from the following scores constructed by EBRD on the basis of the two surveys. Movement from higher to lower score represents improvement.

Table 3.2: Improvements in Infrastructure

| Sub-Region | 1999 | 2002 |
|------------|------|------|
| CEE | 1.9 | 1.1 |
| SEE | 2.4 | 1.7 |
| CIS | 2.1 | 1.9 |

Source: Transition Report (2002), EBRD

Since 1.0 is best possible score, one may surmise that the services were becoming close to normal and reliable at least in CEE. It is also interesting to note that SEE was overtaking CIS, perhaps as a result of cessation of conflicts and resumption of reform.

There is another statistic reinforcing the above finding in 2002 survey. When respondents were asked, “on how many days in 2001, did you experience loss of power, surge of power and insufficient supply of water?” a very high percentage of respondents indicated 0 to 46 days. The results in terms of the sub-regions and sectors are given in the following table.

Table 3.3: Respondents with loss of Service for 0 to 46 days in 2001

| Region/Sub Region | Power | Water |
|-------------------|-------|-------|
| ECA | 94.2% | 95.3% |
| CEE | 99.6% | 99.9% |
| SEE | 93.7% | 95.5% |
| CIS | 89.7% | 91.1% |

Source: BEEPS 2002

The gradual improvement in the infrastructural service provision in the region is evidenced by the findings under BEEPS survey of 2002 and 2005. Some of these findings are discussed below. For the region as a whole, the average number of days on which power outages or high surges of power were experienced by the respondents came down from 11 in 2002 to 9.8 in 2005 (table 3.4). The improvement in respect of rural areas is noteworthy.

Table 3.4: Average Number of days of Power Outages or Power Surges

| Region / Sub-Region | 2002 Survey | | | 2005 Survey | | |
|------------------------------|-------------|-------|----------|-------------|-------|----------|
| | Rural | Urban | National | Rural | Urban | National |
| Three Baltic Countries | 2.5 | 2.6 | 2.6 | 2.4 | 1.1 | 1.5 |
| CEE without Baltic Countries | 3.4 | 1.9 | 2.3 | 1.4 | 1.0 | 1.1 |
| SEE | 11.5 | 11.1 | 11.2 | 20.1 | 23.8 | 22.8 |
| CIS (Middle Income) | 11.8 | 5.9 | 6.9 | 6.4 | 4.3 | 4.6 |
| CIS (Low Income) | 51.5 | 24.9 | 31.7 | 22.8 | 13.8 | 15.9 |
| ECA | 16.0 | 9.4 | 11.0 | 10.9 | 9.4 | 9.8 |
| Turkey- Benchmark | 3.4 | 2.5 | 2.7 | 5.5 | 3.8 | 4.1 |

Source: BEEPS 2002 and 2005- World Bank Staff Analysis

Note: Settlements with a population of less than 50,000 were classified as rural

While the reliability of supply has improved in all other sub-regions, it seems to have become remarkably worse in SEE. This is on account of the poor performance of Albania in which the power outage days increased from 47.5 days in 2001 to 194.2 days in 2004. All the other SEE states had improved their performance to a level better than that of CIS (middle income) countries. Notable poor performers in 2004 included Georgia (57 days), Tajikistan (37 days), and Azerbaijan (16 days). The rural areas in these countries suffered greatly. In the rural areas the outage days were 111 days in Georgia, 78 days in Azerbaijan and 42 days in Tajikistan. It is also important to note that Armenia and Moldova two of the small states in CIS low income group had in 2004 a remarkably low number of outage days (1.9 and 2.1 days respectively) – a level fairly close to that of the CEE countries.

The average number of days during which the respondents experienced insufficient or intermittent water supply also improved for the region as a whole from 9 days in 2001 to 4 days in 2004 (table 3.5). As in the case of power, the improvement in respect of rural areas was remarkable. Once again the unfavorable average number of SEE was caused mostly by Albania (in which the number of days of poor quality service increased from 16 to 91) and partly by Bosnia (2.9 days to 7.7 days). The other states in SEE performed as well as CEE states. Other poor performers were Georgia (11 days) and Tajikistan (10 days). The countries in which the rural areas suffered most in 2004 included Albania (95 days), Azerbaijan (34 days), Bosnia (23 days), Georgia (22 days), Kyrgyz Republic (10.2 days), Tajikistan (12.7 days) and Russia (10.3 days).

Table 3.5: Average Number of days of Insufficient or Intermittent Water Supply

| Region / Sub-Region | 2002 Survey | | | 2005 Survey | | |
|------------------------------|-------------|-------|----------|-------------|-------|----------|
| | Rural | Urban | National | Rural | Urban | National |
| Three Baltic Countries | 1.3 | 1.1 | 1.2 | 0.7 | 0.3 | 0.4 |
| CEE without Baltic Countries | 0.7 | 0.6 | 0.6 | 0.4 | 0.2 | 0.3 |
| SEE | 9.6 | 5.2 | 6.4 | 11.1 | 9.4 | 9.9 |
| CIS (Middle Income) | 15.8 | 12.3 | 12.9 | 6.1 | 3.2 | 3.6 |
| CIS (Low Income) | 44.7 | 17.0 | 24.0 | 8.6 | 3.8 | 4.9 |
| ECA | 13.7 | 7.7 | 9.2 | 5.3 | 3.6 | 4.0 |
| Turkey- Benchmark | 0.6 | 1.0 | 0.9 | 1.0 | 0.5 | 0.6 |

Source: BEEPS 2002 and 2005- World Bank Staff Analysis

Note: Settlements with a population of less than 50,000 were classified as rural

The average number of days during which the respondents experienced outages of land line telephone services also declined for the region as a whole from 5.8 days in 2001 to 1.7 days in 2004. The improvement was both in respect of urban and rural areas (table 3.6). The improvement in respect of the CIS (low income) group is remarkable, especially in Georgia, Kyrgyz Republic, Tajikistan and Uzbekistan.

Table 3.6: Average Number of Days of Telephone Service Outages

| Region / Sub-Region | 2002 Survey | | | 2005 Survey | | |
|------------------------------|-------------|-------|----------|-------------|-------|----------|
| | Rural | Urban | National | Rural | Urban | National |
| Three Baltic Countries | 1.3 | 1.4 | 1.4 | 0.8 | 0.4 | 0.5 |
| CEE without Baltic Countries | 1.1 | 1.4 | 1.3 | 1.6 | 0.7 | 0.9 |
| SEE | 3.7 | 5.4 | 5.0 | 3.1 | 1.7 | 2.1 |
| CIS (Middle Income) | 13.2 | 3.4 | 5.0 | 3.0 | 2.2 | 2.3 |
| CIS (Low Income) | 23.5 | 13.6 | 16.1 | 3.5 | 1.8 | 2.2 |
| ECA | 7.9 | 5.0 | 5.8 | 2.4 | 1.5 | 1.7 |
| Turkey- Benchmark | 0.8 | 0.8 | 0.8 | 0.1 | 0.3 | 0.3 |

Source: BEEPS 2002 and 2005- World Bank Staff Analysis

Note: Settlements with a population of less than 50,000 were classified as rural

Despite improvements registered in respect of service quality, loss of sales (as a percentage of annual sales of 2004) attributed to infrastructure failures by the respondents in the 2005 survey appeared noteworthy at 10.1 % of annual sales for the region (table 3.7). Reflecting slower pace of recovery of service quality in low income CIS countries losses were highest there at 12.8%. Albania and Bosnia accounted for the high levels of losses in SEE, the other states of which had a substantially lower level of losses.

Table 3.7: Loss of Sales Attributable to Infrastructure Failures as a Percentage of Annual Sales of 2004

| Region / Sub-Region | Power Services | Water Services | Telephone Services | Total for all three services |
|------------------------------|----------------|----------------|--------------------|------------------------------|
| Three Baltic Countries | 1.4 | 2.2 | 1.8 | 5.4 |
| CEE without Baltic Countries | 1.9 | 2.5 | 1.6 | 6.0 |
| SEE | 4.4 | 4.0 | 2.6 | 11.0 |
| CIS (Middle Income) | 2.6 | 2.7 | 1.9 | 7.2 |
| CIS (Low Income) | 6.1 | 4.7 | 2.0 | 12.8 |
| ECA | 4.1 | 3.9 | 2.1 | 10.1 |
| Turkey- Benchmark | 2.3 | 1.0 | negligible | 3.3 |

Source: BEEPS 2002 and 2005- World Bank Staff Analysis

Payment of bribes for electricity and water services has also come down during 2001-2004. The percentage of respondents who “never” or “seldom” made any such payment went up from 84% in 2001 to 88% in 2004 in the region.

Table 3.8: Percentage of Respondents who did not pay Bribe for Services

| Region / Sub-Region | 2002 Survey | | | 2005 Survey | | |
|------------------------------|-------------|--------|-------|-------------|--------|-------|
| | Never | Seldom | Total | Never | Seldom | Total |
| Three Baltic Countries | 89 | 6 | 95 | 92 | 4 | 96 |
| CEE without Baltic Countries | 77 | 12 | 89 | 89 | 3 | 92 |
| SEE | 60 | 20 | 80 | 71 | 14 | 85 |
| CIS (Middle Income) | 70 | 14 | 84 | 77 | 12 | 89 |
| CIS (Low Income) | 65 | 16 | 81 | 66 | 15 | 81 |
| ECA | 69 | 15 | 84 | 76 | 12 | 88 |
| Turkey- Benchmark | 57 | 16 | 73 | 81 | 7 | 88 |

Source: BEEPS 2002 and 2005- World Bank Staff Analysis

Percentage of respondents who “frequently” or “usually” or “always” paid bribes to get connected or to maintain the services came down from 7% in 2002 to 5% in 2005.

The extent of bribery is consistent with the level of improvement of the services. It is highest in low income CIS countries in line with slow rate of recovery of the quality of services. Representing the tightness of supply conditions in the rural areas the extent of bribes in such areas was higher than in urban areas.

The surveys asked the respondents to classify power, phone and transport services as well as regulatory uncertainty into one of the four categories, namely (a) major obstacle, (b) minor obstacle, (c) moderate obstacle, or (d) no obstacle to the growth of business. The results, summarized in Table 3.9, clearly indicate an improving trend, with a larger percentage of respondents in 2004 classifying them as no obstacle to the growth of their businesses.

Table 3.9: Percentage of Respondents classifying services as “No Obstacle” to Business Growth

| Region / Sub-Region | 2002 Survey | | | | 2005 Survey | | | |
|------------------------------|-------------|---------|-----------|------------------------|-------------|---------|-----------|------------------------|
| | Power | Telecom | Transport | Regulatory uncertainty | Power | Telecom | Transport | Regulatory uncertainty |
| Three Baltic Countries | 72 | 67 | 72 | 16 | 76 | 81 | 76 | 31 |
| CEE without Baltic Countries | 76 | 71 | 68 | 16 | 74 | 72 | 68 | 20 |
| SEE | 58 | 65 | 63 | 13 | 63 | 66 | 64 | 21 |
| CIS (Middle Income) | 76 | 75 | 73 | 15 | 77 | 79 | 76 | 27 |
| CIS (Low Income) | 54 | 68 | 66 | 21 | 57 | 71 | 65 | 30 |
| ECA | 65 | 68 | 67 | 16 | 68 | 72 | 68 | 25 |
| Turkey-Benchmark | 44 | 46 | 57 | 13 | 55 | 61 | 60 | 28 |

Source: BEEPS 2002 and 2005- World Bank Staff Analysis

The percentages are somewhat lower for Turkey, reflecting the rapidly growing demand for provision of additional services (perhaps involving capacity expansion), while in the rest of the region the higher percentages reflect the rapid stabilization of service quality to meet the slowly recovering demand for services. About 4% to 6% of the respondents considered power, phone or transport services as major obstacles to business growth and about 26% of the respondents considered regulatory uncertainty as a major obstacle. The results relating to regulation can be considered to be indicative of a certain amount of maturing of regulatory systems and processes as well as the increasing ability of businesses to cope with them.

Is infrastructure still a constraint to economic growth?

There is no doubt that the infrastructural services have improved during 1999-2005 and that many businesses do not find them to be an obstacle. However they still have a long way to go to become reliable and achieve an acceptable level of quality in many countries.

The number of days with power outages or power surges is still unacceptably high in Albania (194 days), Georgia (57 days), Tajikistan (37 days), Azerbaijan (16 days), Kyrgyz Republic (14 days), Uzbekistan (8 days) and Kazakhstan (7 days). The regional average of 10 days is also very high. Also the average duration of outage at 5.3 hours for the region is high compared to normal industry standards. The region as a whole attributes the percentage of total sales lost (of about 4.1%) to such outages. Understandably such losses were highest in Albania (11.2%), Georgia (10.7%), Azerbaijan (6.3%), and Tajikistan (8%). Further 32% of the respondents still found power supply presenting them a major, moderate or minor problem. This percentage was much higher in Albania (77%), Georgia (70%), Tajikistan (62%), Turkey (45%), Czech Republic (43%), Armenia (41%) and Uzbekistan (40%), FYR of Macedonia (40%), and Bosnia (39%). Nearly 24% of the respondents pay bribes to get new power connections and wait for 14 days for the connections to be made. Thus power sector in many countries has a long way to go to achieve normal industry standards and cease to be a constraint to economic growth.

The situation relating to water seems to be similar, while that of telephones somewhat better (see Annex). In respect of transport, 32% of the respondents in the region found it to be a major, moderate or a minor problem. This percentage was much higher in Armenia (52%), Bosnia (51%), Czech Republic (48%), Albania (47%) and Georgia (43%).

Regulatory uncertainty has proved a major constraint to business growth. For the region as a whole 75% of the respondents perceived it as a major, minor or moderate obstacle to their business. The percentages were much higher in Serbia-Montenegro (92%), Kyrgyz republic (91%), Moldova (90%), Poland (87%), Bosnia (86%), Czech Republic (85%), Georgia (83%), Russia (82%), Lithuania (81%) and Romania (81%).

As the demand in ECA is reviving, infrastructural services might become a major constraint to recovery and growth, unless the reform agenda (including regulatory reform) is pursued to improve their quality and reliability to industry standards.