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**BELARUS:  
Chernobyl Review**

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**Ukraine and Belarus Country Unit  
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## EXECUTIVE SUMMARY AND RECOMMENDATIONS

- i. The world's worst nuclear accident occurred in Chernobyl on April 26, 1986, releasing at least 100 times as much radiation as the atomic bombs dropped on Hiroshima and Nagasaki. The most affected country was Belarus, for which the environmental, health and other consequences of the Chernobyl accident were disastrous. Over 70% of the radioactive fall-out after the explosion at the Chernobyl nuclear power plant landed on its soil, affecting approximately 2.5 million people.
- ii. The accident has had detrimental consequences for the people affected by the accident, and especially for those who still reside on contaminated lands. In addition to the economic hardships brought by the transition to the whole post-soviet region, these people have to deal with additional challenges posed by the radioactive contamination, including health consequences (the extent of which are still unclear), depressed economic development, an elevated level of poverty and uncertainty about their future -- especially the future of their children.
- iii. Belarus has expended a considerable amount of its resources on mitigating the consequences of the accident. The present value of resources spent from the republican budget since 1993 amounts to 18% of the 2001 GDP<sup>1</sup>. Isolated donor efforts have occurred in areas such as health treatment, equipment, radiation monitoring, and children's health recuperation, but their contribution is small comparable to the magnitude of Belarus's effort.

### The Situation Today

- iv. The situation today in the affected areas is the result of a combination of several factors. These are (a) the overall socio-economic situation in the country, (b) the uncertainty of the effects of radiation on human beings, and (c) the effectiveness of public programs in mitigating the consequences of the accident. The combination of these factors makes it difficult to determine which factors are dominant. Therefore, it is difficult to single out the direct consequences of Chernobyl with great certainty.
- v. Nevertheless, the present report reveals the following:
  - Notable differences exist between the zones with relatively mild levels of contamination and those with higher levels as far as health, economic and social consequences are concerned.
  - Contaminated areas suffer from a distorted demographic structure. As a result of resettlement programs and voluntary migration, the percentage of elderly individuals in contaminated areas is higher than the national average. In addition, a large proportion of skilled and entrepreneurial people have left the region.
  - The affected territories are mostly agricultural, and tend to be poorer than urban areas. Cash incomes are low; people complement their incomes with small-plot production on contaminated lands.
  - The potential for economic activity is rather limited, as (a) the economic situation of large farms, which provide most of the income and employment in the region, is deteriorating and (b) the opportunities for private economic activity and self-employment, already at a very low

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<sup>1</sup> This report does not attempt to calculate the full cost of the Chernobyl accident to Belarus. Rather, the report takes stock of the situation today, reviews current programs, and provides suggestions for how to reorient the Chernobyl strategy towards economic growth, contain the lingering effects of the disaster, and reduce the risks to the population in more efficient ways.

level, are more limited than in the rest of the country. The age structure of the population, the scarcity of skilled people, the measures needed to control contamination, and the need to certify production as radiation-free make matters even worse.

- It has clearly been established that the incidence of thyroid cancer in children has increased as a result of exposure to radiation. Other health consequences for those exposed to different doses of radiation in the long run remain to be seen.
- It is certainly difficult to separate the direct impact of radiation from the indirect impact that may come from psychological perceptions of risk, the consequences of the economic downfall and the quality of health services. Thus, it is not surprising that the affected areas experience health problems similar to those in the rest of the country, while people, inside and outside the affected areas, firmly believe that radiation has had a significant negative health impact on them and especially on their children.
- People are ambivalent about the effectiveness of government programs on Chernobyl, as shown by the sociological survey.
- Although sufficient information on radiation is available, the sociological survey revealed that it is not reaching large groups of the population, and that what information is disseminated is not trusted.

### **Public Programs**

vi. Since Belarus' independence in 1993, the objectives of the Belarus Government have been to limit the health risk of radiation for the population, implement social protection measures, and reduce the environmental and economic consequences of the catastrophe. In implementing its strategy, the Government has achieved some notable successes during the 16 years following the accident. It has minimized the collective radiation dose of the population, developed farming and processing technologies to reduce the level of radiation in food, provided good care for those who fell ill with thyroid cancer and other illnesses, and made a significant contribution to the scientific understanding of the possible causes, scenarios and consequences of nuclear power plant accidents.

vii. However, this strategy has also had unintended consequences. The heavy emphasis on social assistance has encouraged a "victim mentality" and dependency on state support. Also, some programs are not directly addressing health or other consequences; rather, they address exposure to risk by linking benefits to place of residence. Meanwhile, insufficient attention is given to economic development and to boosting the confidence of the people in taking a more proactive role in their lives. Moreover, while mean radiation intake has decreased, some groups of people, especially those in rural areas, are still exposed to high doses of radiation, mainly through food intake. Finally, the current strategy has failed to increase the trust and reduce the anxiety of the population.

viii. The effectiveness of previous government interventions must be reviewed in an historical context. Some measures that were relevant immediately following the accident have become less appropriate over time. The changing social and economic environment calls for new approaches 16 years after the accident.

### **Sustainability of the Current Strategy**

ix. An important question is whether the Government can or should continue current programs. The Government is aware that some of its approaches no longer correspond to

evolving circumstances and is willing to introduce necessary changes. In re-evaluating the current approach to Chernobyl consequences, this report suggests that the following facts are taken into account:

- *Limited budgetary resources.* The shortage of fiscal resources, which is likely to increase in the future, will significantly limit the Government's ability to continue current programs, which are already not being fully fulfilled.
- *Differentiated approaches.* There is a need to differentiate programs and strategies depending on the level of contamination, as problems and complications created by radiation are different in different zones. The zone with mild radiation levels (less than 1 mSv/year), according to most experts, can be made fit for adequate and even prosperous living with limited, cost-effective measures to reduce radiation exposure. The zones with higher levels of contamination (more than 1 mSv/year) would require a different strategy focused on greater monitoring, provision of health and social services, and other assistance.
- *Need to learn from the effectiveness of past programs.* Some government programs have been more effective than others. The Government should conduct a careful review and eliminate those programs that are the least cost-effective. This should be a continuous activity that would provide the basis for further strategic decisions.
- *Take account of poverty considerations.* Poverty is an emerging problem in many rural areas, especially the remote ones; this fact should serve as the context in the development of mitigation programs.
- *Need to improve the reliability of the radiation monitoring and product certification system.* The entire system of food monitoring and certification needs to be improved in order to increase buyer confidence in the reliability of the system.
- *Need to learn from how people have adjusted to the consequences of the accident.* The Government should try to learn more from those who have adjusted to the conditions in the contaminated zones and introduce programs that promote healthy lifestyles and encourage personal initiative.
- *Need to improve the institutional set-up.* The Chernobyl Committee should strengthen its focus on coordination while transferring implementation issues to the ministries where they belong – social programs to the Ministry of Labor and Social Protection, health and recuperation programs to the Ministry of Health and agriculture countermeasures to the Ministry of Agriculture.
- *Need to align the Chernobyl program with country-wide reforms.* Many issues regarding Chernobyl-related problems, such as inefficiencies in the health care, education and social care systems and the economic development climate are generic in nature; these areas need major reforms countrywide.

## Recommendations

x. Based on the evaluation of existing programs, the economic and social situation in the contaminated territories, the opinion of the population and the criteria set forth above, the key recommendations of this report are as follows:

xi. **Focusing Attention on Highly Contaminated Areas.** The Government should focus on the issues faced by the highly contaminated areas – Zone 3 (over 5 mSv/year) and, to a certain extent, Zone 2 (from 1 to 5 mSv/year). Many settlements in these zones are in economic disarray,

have a high proportion of elderly population, suffer from elevated levels of poverty, and cannot offer adequate social, health and other services to their residents. People in these zones perceive themselves to be much sicker than others, according to the sociological survey. Most concerning, they seem to have given up on themselves and do not care about self-protection measures or their future. Special assistance programs should be specifically designed and targeted to serve these people.

xii. **Finding New Ways of Informing the Public.** The results of the survey suggest that the current information program is not reaching large numbers of people, and that the information is considered unreliable. This is not only a problem with the information strategy but also a deficiency of the overall Chernobyl strategy of the Government, which has failed to gain the interest and understanding of the population. A new, improved Chernobyl strategy should be designed, as described in this report, in tandem with a new information strategy. The latter should embrace a comprehensive approach to promoting healthy lifestyles, accompanied by concrete activities that would encourage people to improve their lives. In the health sector, for example, health education aiming at reducing internal and external radiation should be developed in the context of health promotion policies and interventions that aim at reducing the main causes of burden of disease, especially amongst the poorest populations.

xiii. **A New Approach to Economic Development of the Affected Regions.** Economic development should be a key priority of the Government. Programs should shift from those that create a victim and dependency mentality to those that support opportunity, promote local initiatives, involve the people and spur their confidence in shaping their destiny.

xiv. *Improve business climate and support private sector development.* The Government has developed a new vision of private sector development (PSD) in the country, which includes streamlining registration and licensing and reducing the golden share provisions in privatization. It should build on this vision in order to develop a new approach to PSD in the Chernobyl regions as well as countrywide. It could start with some experiments/pilots in contaminated oblasts that are likely to attract potential entrepreneurs and lead to faster growth.

xv. *Support rural development.* The Government can promote sustainable livelihoods and economic development in rural areas by improving the environment for agribusiness and other business development. For example, the Government could make rural development packages available to those individuals who would like to engage in private activities both agricultural and non-agricultural (such as rural services, education, micro-credits, marketing assistance, etc.).

xvi. *Provide economic incentives.* The use of economic incentives and the improvement in the business environment should proceed in tandem, as the use of tax and other incentives to attract entrepreneurial and skilled people to the region may not work in an unfriendly business environment or because badly designed instruments may lead to perverse incentives.

xvii. **Streamlining and Refocusing Government Programs.** If the main objectives of the Government are indeed to reduce the exposure of the population to radiation and to provide support to those who have been directly affected by the accident, the current programs need to be refocused in order to meet these objectives in a cost-effective manner. The review of current activities confirms that many existing programs do not quite meet these objectives. When reconsidering the Chernobyl programs, emerging priorities should be considered and program adjustments should be guided by the following criteria: (a) aligning programs with new objectives; (b) preventing the creation of perverse incentives; and (c) matching the mandates with available resources. A significant discrepancy between the commitments and the actual delivery of benefits will hamper the credibility of these programs.

xviii. Thus, the report recommends that (a) certain programs should be strengthened and expanded (e.g. and dissemination of information and education, monitoring and certification; provision of better primary health services, including psychological support; provision of social care in highly contaminated areas, support for clean food production;); (b) others should be streamlined or refocused to target the most vulnerable groups in the most contaminated areas (e.g. health recuperation, free meals for children, free medicine); and (c) programs with limited impact on reducing exposure should be reduced or even eliminated (e.g. cash benefits to people in low contamination zones, and capital expenditures in new social infrastructure).

### **An Agenda for the World Bank and Donors**

xix. Belarus has so far carried the burden of the Chernobyl aftermath, while donor assistance, albeit very welcomed and helpful in resolving some problems, has not been sufficient and sometimes not targeted to the most critical needs. Belarus is the repository of substantive knowledge for mankind, but the country does not have the potential to develop and systematize this knowledge, as this would require significant investment in research (which the country cannot presently afford). The international community should contribute its share toward this research, since the international community is likely to benefit the most from this knowledge in the future.

xx. A change in Belarus's Chernobyl strategy towards forward-looking activities directed at economic development and improvement in quality of life, as proposed by this report, will provide solid ground for increased assistance from the international community.

#### **xxi. The following are the areas of possible Bank and donor assistance:**

- Improving the system of information and education
- Building community support for healthier lifestyles (e.g. expansion of the Ethos project)
- Improving the monitoring of radionuclides in environment and agricultural produce
- Supporting rural development in Gomel, Brest and Mogilev oblasts (e.g. improved business climate, micro-credits, rural services, education, marketing assistance, etc.)
- Providing SME support (e.g. improved business climate, business incubators, micro-credits, office space, training in entrepreneurship)
- Developing radiation countermeasures for food production (e.g. expansion of successful local and donor initiatives/pilots)
- Performing research and epidemiological studies to deepen the understanding of health and other consequences of radiation (preferably donor-funded)
- Improving the provision of primary health care services, including psychological assistance
- Providing technical assistance on streamlining expenditure and institutional arrangements (preferably donor-funded)
- Providing technical assistance on strengthening capacity in the assessment of the efficiency and effectiveness of government programs.