

CONCLUSIONS AND RECOMMENDATIONS

of the project “Persistent Toxic Substances, Food Security and Indigenous Peoples of the Russian North”

The main conclusion of the first AMAP assessment (AMAP, 1997) clearly stated that the well-known benefits of breast milk and traditional food definitely out-weighed the risks to human health risks from contaminants. The social, cultural, spiritual and physical health of Arctic indigenous peoples, depends on the collection and consumption of country foods. The consumption of local fish, meat, wild greens and berries is important in providing the necessary dietary intake of most nutrients, vitamins, essential elements and minerals. Based on these conclusions, the AMAP assessment recommended that:

- Consumption of traditional food continues, with recognition that there is a need for dietary advice to Arctic peoples so they can make informed choices concerning the foods they eat;
- Breast milk should continue to be promoted.

These basic conclusions and recommendations have received full acknowledgement and support within the framework of this project. At the same time, a number of important findings made during the period of project implementation have promoted the development of conclusions and recommendations specific for Arctic Russia, and for the objectives of the project.

1. A close partnership has been successfully achieved between researchers and indigenous organizations and communities in accordance with internationally recognized practices, as well as effective co-operation in developing remedial actions to reduce health risks resulting from the contamination of the environment and traditional food sources. The project has been implemented with the active participation of the Russian Association of the Indigenous Peoples of the North, Siberia and Far East (RAIPON) and its regional branches. RAIPON representatives acted as equal partners with the scientific teams in all project activities and phases, including the development of project recommendations. Achieving the project objectives would not have been possible without close collaboration with the Russian executive authorities, and particularly the administrations of the regions where the project was undertaken.
2. Project implementation has enhanced the position of the Russian Federation in international negotiations to reduce the use of PTS, and empowered RAIPON to participate actively and fully in these negotiations. The signing of the Stockholm Convention on Persistent Organic Pollutants by the Russian Federation, the active role played by RAIPON, in line with other International Organizations of the Arctic Indigenous Peoples, and the full-scale participation of Russian federal executive agencies and RAIPON in the development and implementation of the Arctic Council Action Plan to eliminate pollution in the Arctic are good, but not the only, indicators of attaining relevant project objectives.
3. The existing system in Russia for statistical reporting of environmental releases do not cover most persistent toxic substances, and in particular, those covered by the Stockholm Convention on Persistent Organic Pollutants.

In this respect, it is recommended that new forms of state statistical reports on industrial atmospheric emissions, waste water discharges and solid wastes, be developed and approved, which should be adequate for the requirements of the Stockholm Convention on Persistent Organic Pollutants and other international treaties and agreements aimed at the limitation of environmental and human health effects of persistent toxic substances. In this, it is recommended that experience gained in the development and use of registers for emissions of contaminants and transport be used.

4. From experience gained during project implementation, existing data and information on PTS pollution sources available to federal and local environmental and human health authorities does not adequately reflect the actual situation in the Russian Arctic regions. Studies and surveys within the project framework have documented the environmental impact of unknown local PTS sources. In particular, there is evidence of relatively fresh environmental releases of contaminants such as DDT and PCB.

Taking into account the objectives aimed at implementation of the Environmental Doctrine of the Russian Federation and the Fundamentals of the State Policy in Chemical Safety, it is recommended that a source inventory system be developed and implemented in the Arctic administrative territories inhabited by the indigenous peoples, that covers both former and current releases of PTS from all economic activities.

5. PCBs can be considered as one of the most serious environmental and human health risk factors for the areas covered by the project, which cannot be adequately explained by long-range transport and existing information on local sources. According to the Russian PCB inventory, 53,000 out of 180,000 tonnes of PCB produced in the former USSR, were used for the production of paints, varnish, lubricants and other products, i.e. they have been used in open systems. Although this type of PCB use could not be taken into account by the inventory, it is likely that some of the PCB-related problems mentioned above also resulted from contamination from such sources.

Within the framework of the Russian National Action Plan on implementation of the Stockholm Convention, it is recommended that a special section on the rehabilitation of PCB-contaminated sites, including land and housing be developed and implemented. With respect to this issue, special attention should be paid to land and settlements inhabited by Arctic indigenous peoples, taking into account their lifestyle and social vulnerability.

6. A significant proportion of total global PTS in the Arctic environment, is determined by their long-range transport. For example, the pesticide, Mirex has not been produced and used in either the USSR or Russia. However, levels of Mirex in the blood of the indigenous population residing in the Russian Arctic, particularly in coastal Chukotka, are found at clearly detectable levels, albeit lower than in some other parts of the Arctic, such as Arctic Canada. At the same time, the validity of long-range atmospheric transport and deposition estimates is limited by the scarcity of data on remote sources, and a lack of comprehensive source inventories.

It is recommended that the Government of the Russian Federation, in cooperation with the other member countries of the Arctic Council, take active measures in the international arena to ensure the reduction, and in the future, the full elimination of

environmental and human health threats from global PTS. In particular, it is recommended that the Russian Federation ratifies the Stockholm Convention on Persistent Organic Pollutants, and joins the Aarhus Persistent Organic Pollutants and Heavy Metals Protocols of the UN-ECE Convention on Long-range Transboundary Air Pollution.

7. Environmental aspects of human health, particularly those associated with PTS exposure of indigenous peoples, are closely linked to the economic and social status of indigenous families. In this respect, a significant reduction in the effects of PTS on human health cannot be successfully achieved without improvement in the economic and social conditions of the Russian Arctic indigenous peoples.
It is recommended that, the National Plan of Economic and Social Development of the Northern Territories of the Russian Federation, which, it is envisaged, is to be developed or reconsidered following the Meetings of the State Council Board of the Russian Federation and of the President of the Russian Federation with the representatives of the northern territories of the Russian Federation in Salekhard, 28-29 April, 2004; should fully address improvements to the social and economic conditions of the Russian Arctic indigenous peoples. This action should be undertaken with the full involvement of the indigenous peoples.

8. In general, PTS levels in the natural environment and biota of the Russian Arctic are at moderate levels compared to other Arctic regions. This presents a means to significantly reduce PTS intake by indigenous peoples without intervening in their basic traditional lifestyle and cultural identity, through the implementation of protection and remedial actions, including improvement of sanitary conditions in the indigenous settlements and by implementation of household and dietary recommendations developed as a result of the findings of this report.
As a follow-up to this project, it is recommended that the Russian federal executive human health and environmental authorities, in close collaboration with the Russian Association of Indigenous Peoples of the North, Siberia and Far East and regional and local administrations, develop a set of practical activities aimed at achieving, in full acknowledgement and respect of the traditional lifestyle and cultural identity of the Russian Arctic indigenous peoples, a significant reduction in their PTS intake. These measures, which should be an integral part of the National Plan of Social and Economic Development of the Russian Northern Territories, should include actions required at the federal, regional and local levels, taking into account the circumstances of each area. More specific regionally-based recommendations, addressed to the indigenous peoples should be presented in special publications in Russian.

9. The levels of human exposure to PTS in the Russian Arctic, specifically to HCB and HCH, and, in some cases, also to DDT and PCB, is one of the highest reported for all of the Arctic regions. In some cases, exposure has been shown to exceed levels assessed for residents of territories, which are internationally recognised as disaster areas, such as the Aral Sea region, due to long-term use of persistent pesticides. In the areas of the Russian Arctic studied, practically every indigenous family consumes a significant amount of traditional food. Families with low incomes rely to a greater extent on the local, fat-rich traditional diet. As a consequence, low-income indigenous families are at greater risk of exposure to POPs.

It is recommended that the human health authorities and administrations of the territories of the Russian Arctic inhabited by indigenous peoples, in close collaboration with the regional branches of RAIPON and in full acknowledgement of the importance of the traditional diet for nutrition and preservation of the national and cultural identity of the indigenous peoples, as part of their lifestyle, develop appropriate targeted measures to reduce PTS intake with traditional food, based on specific recommendations, the improvement of social and economic conditions and the raising of awareness about existing problems.

10. The highest PTS exposures and associated health risks are documented for the coastal areas of Chukotka, where the traditional diet of the indigenous population is largely based on marine mammals and fish. This corresponds to previous information obtained concerning the Greenlandic and coastal Canadian indigenous populations. *It is recommended that, in the development of practical follow-up measures, special attention should be paid to the situation in the Chukchi AO, taking into account both, the social and economic status of the indigenous peoples in this region of Russia, and the health risks associated with PTS intake. On the basis of data obtained within the framework of the project, the coastal areas of the Chukchi AO are of main concern with respect to human health risks.*
11. Indoor and occupational sources of PTS, including contamination of dwellings, are likely to be a significant contributor to blood contamination among indigenous peoples of the Russian Arctic. It was found that all of the houses of indigenous people studied during the targeted surveys, were contaminated by POPs, mostly by PCB and DDT. Levels of indoor PCB contamination correlate to levels of PCB measured in the blood of indigenous families living in these houses. *It is recommended that remedial action to remove PTS contamination from the houses of indigenous families, should be an important and urgent action, aimed at improving the social and economic status of indigenous communities.*
12. It was found that the labelling of chemicals produced and retailed for household protection against insects and rodents, often does not correspond to their actual chemical composition, and that these chemicals sometimes contain toxic substances in high concentrations, particularly DDT and PCB. *It is recommended that proposals for amendments to the Federal Law “On safe handling of pesticides and agro-chemicals” be developed, to ensure implementation of strict and efficient control measures over the production and trade of pesticides and other chemicals for private use, particularly those used for protection against insects and rodents, which would ensure a complete ban on the use of PTS in these chemicals.*
13. In a number of cases, home-made local food contains higher levels of PTS contamination than raw products obtained from the natural environment. It has been shown that additional contamination of food by PTS can take place when food is stored, processed, and/or cooked in a contaminated household environment. *It is recommended that the local human health authorities, in close collaboration with regional branches of RAIPON, work out an efficient action plan to improve sanitary conditions in indigenous houses. These measures should be integrated with communication with indigenous families and efforts to raise awareness about the health risks associated with contamination of home-processed food.*

14. POP concentrations measured in blood serum are highly dependent on age. This phenomenon may reflect past exposure to POPs. The number of breast fed children has also been found to be a significant determinant of POPs serum concentrations in women. Serum concentrations of lipophilic contaminants are reduced by an increase in parity. Statistically significant associations have been found between blood concentrations of total PCBs (Arochlor 1260), lead and a number of non-specific reproductive and developmental health effects such as the prevalence of low birth weight, premature births, stillbirths and major structural malformations. Serum concentrations of total PCBs in maternal blood also appear to be associated with impacts on newborn sex ratios. In contrast with both national and global statistics, female babies of indigenous mothers with elevated POP blood concentrations, have a higher risk of low birth weight and other adverse outcomes of pregnancy when compared to male babies.

It is recommended that the Russian human health authorities implement internationally recognized levels of concern for PTS blood concentrations. It is further recommended that dietary safety advice based on the benefits of traditional food are made an important component of prenatal care and of family planning strategies for the indigenous communities at risk.

15. A close correlation between PTS levels in blood and breast milk has been documented for indigenous women of the Chukchi AO.

It is recommended that the international and Russian national health and environmental protection authorities develop recommendations for the assessment of human PTS intake, based on levels of these contaminants in blood and breast milk, taking into account the advantages and drawbacks of using these indicators for different groups within the population.