

## **RESOLUTION OF THE INTERNATIONAL WORKSHOP**

### **“Worldwide System of Early Warning against Volcanic Activity and Mitigation of Global/Regional Consequences of Volcanic Eruptions”**

**Moscow, Russia, 8-9 July 2010**

European community was unprepared to deal with volcanic ashes phenomena on such scale and duration. There is little scientific evidence in this area, most of the data is missing, there is no available risk assessment to enable policy makers to react to scientific evidence. Actions must be taken now to ensure that other unforeseen disasters are better planned for. The scientific community needs to be more proactive and the response from scientists must be timely and tailored to the needs of policy makers. Multidisciplinary approach is essential for success of these activities.

To sum up presentations, made during the Workshop by the leading experts in volcanology from Russia, European Union, US, Japan, Canada and Armenia, and contributions by representatives of ROSGIDROMET, ROSAVIATION and other relevant organizations and ISTC management, and subsequent discussions, the Workshop participants wish to come up with the following recommendations:

1. Appreciating the ISTC for its activities and recognizing the relevance of the further strengthening of international science and technology cooperation to ensure global and regional security during volcanic eruptions, consider worthwhile to expand the ISTC involvement in this area through support of research and development and the related activities in Russia/CIS.

2. The Workshop notes a high scientific potential of experts in volcano research and availability of highly-skilled staff, which opens up prospects for increased involvement of the leading organizations in the joint international projects, also through the attraction of the ISTC's funds and its organizational resources.

Further research should be conducted on the basis of co-funding by governmental agencies and through attracting private investments, including private and public partnership as a format of cooperation.

3. Considering that even minor eruptions may cause incommensurable economic losses, recommend that the public authorities seek to promote a closer and properly regulated interaction between services in charge of volcano monitoring and those ensuring safety of air traffic, such as national meteorological services and aviation authorities. It must be recognized that volcanologists, meteorologists and the aviation authorities all provide a critical function.

In this context it is recommended that up-to-date technical systems of active volcano monitoring using surveillance equipment of ground and space deployment and methodic support of the monitoring process be implemented in a broader way, meanwhile improving the methods of volcanic eruption risk prediction and evaluation.

4. Recommend that the ISTC management put the research, complying with the subject and goals of projects and programs in the sphere of global and environmental security, implemented by the states, represented at the workshop, on the list of priorities.

In doing so a special attention should be paid to:

- Development of technologies and equipment;

- Assessment of the impact of volcanic ashes on aviation engines and environment.
- Development of new analytical methods and instrumentation to provide a high-quality base to be used for analyzing the condition of the environment and for conducting basic and applied research;
- Basic research of reasons, mechanisms and consequences of the environmental changes, provoked by volcanic eruptions;
- Development of equipment and technologies, ensuring monitoring of volcanic eruptions.
- Drafting recommendations on the risk mitigation for the population in areas of manifested volcanic activity;
- Development of methods and techniques for prediction of volcanic eruption product transfer and precipitation in the atmosphere, including chemically active changes. Investigate into possible precipitation of volcanic clouds by aircrafts;
- Construction of a pilot satellite system for monitoring precursors of volcanic eruptions and the related air transport risks;
- Promote training and procedures testing through exercises involving volcanologists, meteorologists, civil aviation traffic management in cooperation with the Volcanic Exercises Steering Group (VOLCEXISG) of the International Civil Aviation Organization (ICAO).

5. To implement the abovementioned recommendations and to ensure coordination of activities, related to the adopted Workshop follow-up program it is suggested that a Task Force be set up to be composed of representatives from the ISTC, public authorities from the states, represented at the Workshop and research organizations.

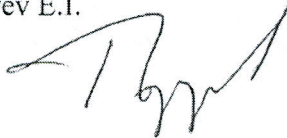
6. Request that the Workshop organizers prepare and publish the Workshop Proceedings, and put presentations to the ISTC website.

7. Recommend the ISTC to provide support in organization of a conference on volcanic ashes in the US (Alaska) in May 2011.

Workshop Co-Chairs:

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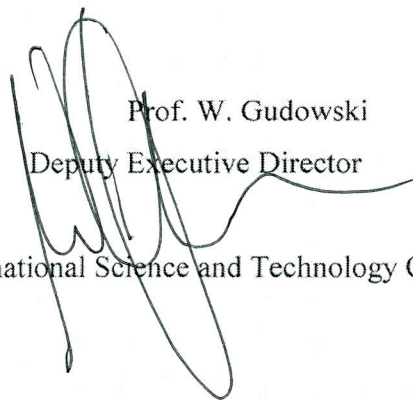
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