

Minutes of the
«Service National d'Observation en Volcanologie» scientific committee meeting
Monday 25 June 2012, IPGP, 1, rue Jussieu – 75005 Paris

Participants: Patrick Allard, Alain Bernard, Alessandro Bonaccorso, Edoardo del Pezzo, Jean-Luc Got, Edouard Kaminski, Jean-François Lénant, Joan Martí, Jurgen Neuberg, Bruno Scaillet, Jo Gottsmann, Diament Michel, Nikolai Shapiro, Claude Jaupart, Patrick Bachelery, Pierre Agrinier, Philippe Labazuy, Jean Virieux

Meeting starts at 10.00 with welcome by Joan Martí, President of the Scientific Committee (SC), who indicates that the aim of meeting is to discuss the progress made so far since the previous Scientific Committee Meeting, taking account of a series of presentations by different stakeholders in the INSU. This is followed by a short introduction of attendees.

10:30-15:00 Presentations

Michel Diament, Director of Solid Earth Sciences of CNRS/INSU: Presentation of the CNRS/INSU, Commission des Services d'Observation

Michel Diament is the person-in-charge of research and observations in Solid Earth sciences for CNRS/INSU which means that he is in charge of observatories. In his presentation, he explains details on the structure of INSU (National Institute for Earth Sciences and Astronomy): it is one of the 10 sections of CNRS, includes 26 observatories of Universe Sciences; has 8500 scientists, and includes fields such as Planetology, Geodynamics, Magnetism, Geodesy and Gravimetry, Natural Hazards (Seismology, Volcanology, Landslides), Palaeoenvironments, etc. It also hosts very large research infrastructures such as RESIF; Seismology and Geodesy (already part of EPOS), but volcanology is not part of this yet. INSU in its Solid Earth component has 5 national observation services (SNO) of which the Service National d'Observation en Volcanologie is one. Diament strongly favours suggestion for open data availability to the scientific community.

After Diament's presentation there is general consensus in the SC in that it would be important to know how INSU establishes what is going on in the observatories and the link with services, what does INSU get in return of investment, and if INSU actions concerning volcanology are at the leading edge of science. Joan Martí asks if INSU observatories do forecast in addition to observations, and Patrick Allard answers that they only do observation. Joan Martí asks who is in charge of forecasting? There is some discussion among the participants but no clear answer is given to that question. It also asked what is the role of INSU in financing? And Michel Diament informs that it distributes the funds (about 1 Meuros per year) among all observatories while human resources come from another channel related to Universities. He also informs that there are 40 dedicated personnel for INSU service on volcano observations.

Steve Tait, Past-director of IPGP volcanological observatories: presentation of activities of IPGP Volcanological Observatories during the last two years

Steve Tait describes the main projects that have been developed with the participation of IPGP in the last two years. He informs on the increase in monitoring facilities of IPGP observatories. In the case of Antilles he indicates that there has been a major interest in understanding the processes from a regional perspective rather than looking at each volcano in particular. He remarks that current pertinent research questions are: Interaction between volcanoes and seismics/tectonics? Complex eruptions phreatic vs magmatic; How to interpret paucity in eruptions? What determines the eruption regime? Debris avalanches: cause, timing and nature?, and concludes that observations help and support research projects such as DOMOSCAN muon radiography (Gibert), and they aim at developing an arc scale monitoring network, including preparation of shake maps, in collaboration with local partners such as SRC, Trinidad and Tobago.

He also explains that for Reunion Island there has been a number of projects developed, including hazard assessment for explosive and effusive volcanism and volcano surveillance, with a significant improvement in the seismic network and the data transmission system. He explains the plans for installation of borehole strainmeters and to develop a IPGP datacentre.

Jurgen Neuberg asks for the IPGP's involvement on Montserrat and interaction with MVO and what has been the benefit for IPGP based on contribution of the order of 140k per year?. Steve Tait replies that the main value is improving in how to monitor a magmatic eruption and conduction of hazard and risk assessment, and that IPGP has mainly the role of observer.

Pierre Agrinier, Director of IPGP Volcanological Observatories: Future activities of IPGP volcanological observatories

Pierre Agrinier explains that IPGP has two main scientific aims for the near future, which are to improve their understanding on arc volcanism in Antilles and hot spot volcanism in Reunion. Also they plan to improve data dissemination among the scientific community through WEBOBS, VOLOBSIS (selective and protected access), and in terms of volcano monitoring they plan to improve short-term and mid-term monitoring installing a new observatory in Martinique and passing paper data into digital format in order to extend time series observation. He explains that he is new in volcanology has no previous experience in risk management.

A general discussion starts after Aginier's presentation and several issues arise: Discussion of the role of all entities for crises forecasting; recommendations need for organisation/management of crises response on a national level; lack of clarity in the link between INSU/CNRS/IPGP and crises managers at a national level, which seems to be better in overseas departments.

Jurgen Neuberg ask what is the future plan for Monserrat, as the contract IPGP has there finishes next year?. Agrinier answers that they will try to continue.

Nicolai Shapiro, responsible of the IPGP data centre: IPGP new data centre

Nicolai Shapiro stresses the importance of open data distribution, indicating that data are obtained with public funding, so they should be freely available. He also indicates that this measure facilitates comparative studies with other volcanoes. However, he insists that this is a long term effort that requires qualified personnel. Also, he recognises that there exist

problems related to complexity of data formats and the related definition and fill-in of so-called metadata. IPGP data centre includes seismological and volcanological data, Geoscope, Magnetics, spatial OBSERA. Shapiro also indicates that the effort in personnel requires funds of the order of 150k€

General discussion follows Shapiro's presentation and several questions and concerns. To the question: How to credit data source? Nicolai Shapiro answers that IPGP operates data usage policies and attempt to track data usage. Another question is: Is there any link to EPOS? and Shapiro's answer is that currently the link between volcano observatories data and EPOS is not clearly defined.

Patrick Bachelery, Head of OPGC, Clermont-Ferrand: Activities of OPGC during the last two years

Patrick Bachelery explains the characteristics, objectives and structure of the Observatoire du Physique du Globe de Clermont-Ferrand (OPGC). It hosts 5 service observation (SO) including satellite and ground based services (OI2 , HOTVOLC, VOLDORAD, GAZVOLC, Pôle de télédétection). OI2 stands for Indian Ocean InSAR observatory and provides VOLDORAD data available online. OI2 provides automated processing service and publication online. Is now an official service included into the SNO Volcanology and, therefore, it is supported by INSU, following a scientific committee recommendation made in 2010.

Philippe Labazuy, Head of the "Pôle de télédétection" of OPGC: Pôle de télédétection of OPGC

Philippe Labozuy presents the Pôle de télédétection and explains about how all data from OPGC's SO come together. Data are integrated via DYNVOLC (L. Gurioli) and perhaps supported by new SO on muon imaging TOMUVOLC. He also presents an outlook for next 5 years regarding VOLDORAD and comments that deployment at Reunion does not necessarily imply a great cost/benefit ratio. He also identifies as future priorities a potential focus on PF and rockfall activity at Montserrat, and also a potential installations at airports in Antilles.

Jean-Luc Froger, Head of the OI2 of OPGC: OI2 future activities

OI2 future activities was part of Patrick Bachelery's presentation.

15.00-15.45 Open discussion on presentations and future strategies of the "Services d'Observation Volcanologique", and technical recommendations (financial support, human resources and specific items)

Joan Martí summarises some advancements from the 2010 recommendation including data availability, and inclusion of SO remote sensing as part of INSU

Joan Martí raises the following questions concerning responsibility for volcano crises management:

1.- Who is responsible in France for declaring a volcanic alert?.

- 2.- Is there any national committee to advise in case of volcanic crisis?
- 3.- Who is in charge of managing volcanic crisis?
- 4.- Who interacts with Civil Protection?
- 5.- How much of the INSU funding goes to improve crisis management?
- 6.- Is there any specific funding to react in front of a volcanic crisis?. If so, who is providing it?

Claude Jaupart replies that by law the prefect is the person responsible to declare the state of emergency. The IPGP volcano observatories send a monthly bulletin to prefet. However, there is not a national committee to advise in case of volcanic alert.

Bruno Scaillet informs that BRGM host a hazard division (with about 100 people) and that they do actively participate to several FP7 projects where volcanic risk is a central issue (MIAVITA, NEMOH, MEDSUV, ...). This means that they do actively participate on volcano studies, so they should be involved in a general brainstorming exercise on how to organise and optimise the French system on Volcano surveillance. if a French task force or whatever, is to be organised in the future to face and handle the next volcanic crisis, BRGM should be also involved. Claude Jaupart questions actions of BRGM as they are funded by a different ministry (ecology) compared to IPGP and CNRS.

Patrick Allard insists on the issue that there is a lack of responsible entity for volcanic crises management. There used to be a structure in the 80s but this entity no longer exists.

Jean Virieux informs that there are structures regarding seismic or tsunami crisis management depending on the dedicated territory but there is no organised structure in volcanic hazards. Also, he informs about the existence of another actor regarding tsunami hazards, namely BRGM.

Claude Jaupart comments that it is unlikely to see funding prior to volcanic crises and that the position of ministry appears to be once case for crises is there then funding will come. He recommend to push ministry to commit in writing even if the document does not make sense, as oral commitments are useless to make case to free science funding.

Alessandro Bonnaccorso remarks that it seems to be a need to better integrate the French scientists with volcano observatories.

Claude Jaupart requests to comment on necessity for observatory personnel to exploit geological, geochemical and geophysical data of past eruptions to learn more about potential future activity.

Jurgen Neuberg points out that volcanologist should focus on working on preparedness to link hazards with risk and communicate these issues effectively to stakeholders in the light of difficult climate to obtain funding for surveillance of seemingly "inactive Volcano".

Joachim Gottsmann asks what is the level of awareness building in overseas territories?

Claude Jaupart replies that volcanic risk and hazard awareness building exercises are in place in the departments affected by volcanic risk.

15.45-16.00: Conclusions

After the general discussion the Scientific Committee notes that situation is in a similar state that in 2010 in the sense that French observatories play a critical role in the long-term strategy for volcano surveillance in the context of a European framework. For this reason, it is a bit frustrating to see that French observatories may still have difficulties, caused by insufficient resources (human and instrumental), but also by the lack of accessing the data from these volcanic observations as well as by the lack of a clear protocol for managing volcanic crisis, to react to and to manage an evolving crisis efficiently. Therefore, the Scientific Committee makes several recommendations that are considered of high priority.

Recommendations

- 1.- Scientific research conducted at the Service National d'Observation en Volcanologie of INSU should be also for improving crisis management and risk reduction.
- 2.- Open access to data needs to be a priority of the INSU Service National d'Observation en Volcanologie. User of INSU data should acknowledge their source and include as authors the scientists and engineers in charge of monitoring when INSU data are used to write a scientific paper.
- 3.- INSU should propose the creation of a National Committee to advise in authorities in case of volcanic crisis, and trying to include in this committee scientists from other institutions (e.g.: BRGM, CEA) and universities. This committee should have a permanent contact with Civil Protection.
- 4.- The French volcanological community should be aware of that INSU has concerns in helping management of volcanic crisis.
- 5.- INSU should promote improvement of the number of well trained scientists and technicians working in volcano observatories through the incorporation of new personnel and / or redistributing the personnel already working for INSU.
- 6.- INSU should insist on the study of past activity in each volcano in addition to conducting volcano monitoring. Also, it is necessary to insist in interpreting the monitoring signals, in addition to record and processing data.
- 7.- INSU should work more on preparedness (to communicate about hazards and risks, etc), to conduct experts elicitation, to convince Civil Protection to be proactive rather than only reactive, in particular for those volcanoes with very low activity (Guadalupe, Martinique, ..).
- 8.- INSU should include in the national service in Volcanology all Clermont Ferrand services as long as they are services which should be maintained over years with open access data.

Joan Martí

Barcelona, July 16, 2012