



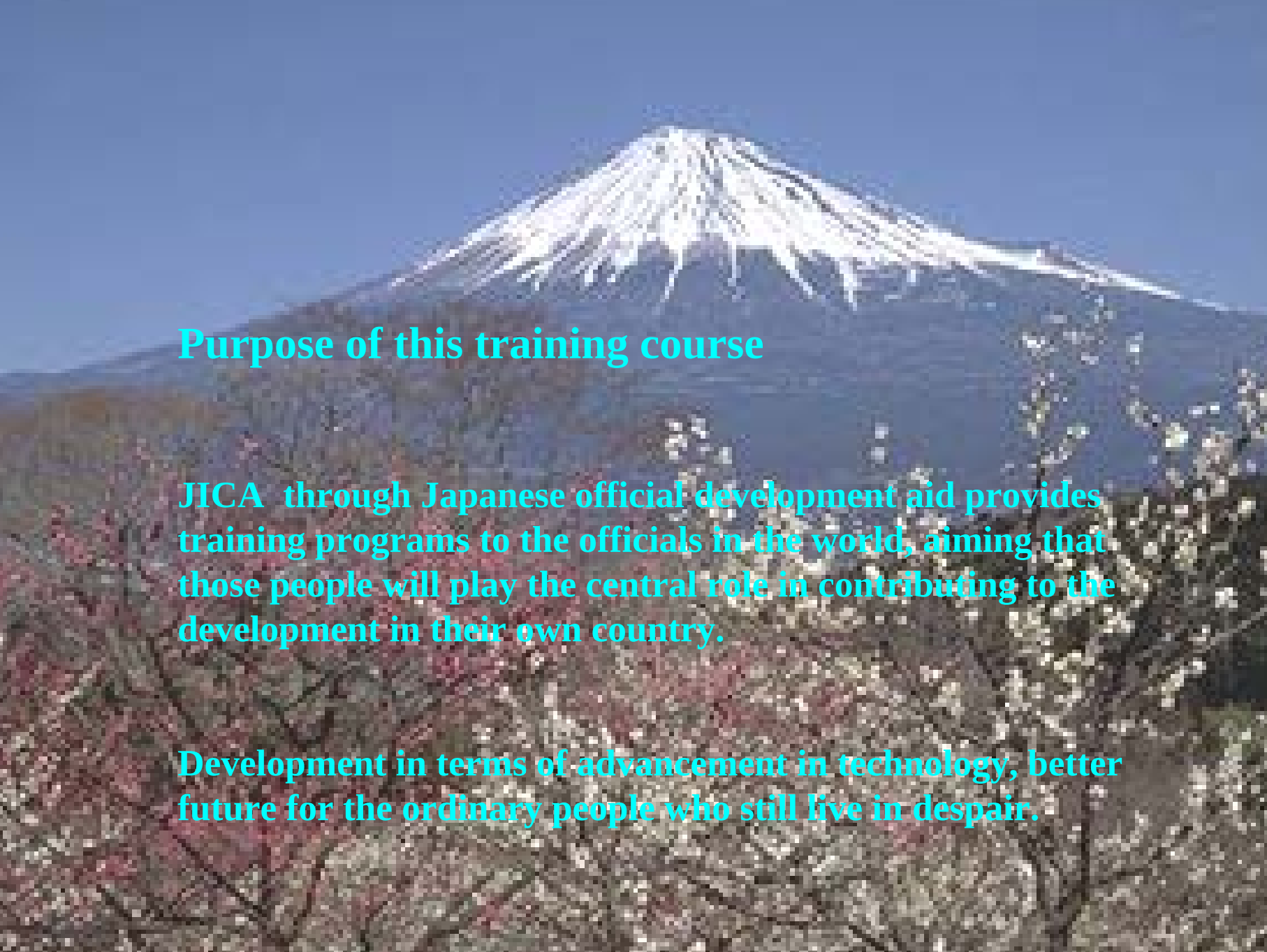
FINAL TRAINING REPORT

**RISK ASSESSMENT AND MONITORING
FOR ENVIRONMENTAL CHEMICALS**

Bolivia



Ms. Gina Teresa Herbozo Zurita



Purpose of this training course

JICA through Japanese official development aid provides training programs to the officials in the world, aiming that those people will play the central role in contributing to the development in their own country.

Development in terms of advancement in technology, better future for the ordinary people who still live in despair.

TRAINING PROGRAM

LECTURES

- Endocrine Disruptors
- Risk assessment of environmental chemicals
- Research and development new agrochemical substances
- Pesticide application policies in Japan
- Environmental Chemistry and Green chemistry
- Air, water and soil pollution and their importance on the environmental protection

TRAINING PROGRAM

- ✧ Japan successful experience in chemicals management
- ✧ Persistent Organic Pollutants (POPs)
- ✧ Waste management
- ✧ Water quality
- ✧ Analysis of environmental chemicals

OBSERVATIONS



OBSERVATIONS



PRACTICE

✦ **HORIBA, Ltd., HITACHI, Ltd., SHIMADZU, Ltd.**

- pH Meter & DO Meter
- Wastewater treatment system
- Air pollution monitoring and stack gas analyzer
- Automotive emission gas analyzer
- Atomic Absorption Spectrophotometer (AAS)
- Gas Chromatograph / Mass Spectrophotometer (GC/MS)
- High Performance Liquid Chromatograph / Mass Spectrophotometer (LC/MS)

PRACTICE



LABORATORY PRACTICE

Hyogo Prefectural Technology Center for Agriculture, Forestry and Fisheries (HPTCAFF)

- Pesticide Residue Analysis in soil
- Water sampling and analysis
- Analysis of heavy metals in soil
- Influence of agricultural chemicals to soil biomass
- Analysis of nitrate in vegetables
- Rapid Analysis of pollutants in soil



LABORATORY PRACTICE

☀ Kobe Quarantine Station

- Simultaneous analysis of pesticide residues for vegetables, fruits and cereals, beans and seeds
- Good Laboratory Practices (GLP)
- Recovery Rate Test



Laboratory practices

☀ Hyogo Prefectural Institute of Public Health and Environmental Sciences (HPIPHES)

- Analysis of VOCs
- ELISA
- Analysis of heavy metals
- Atmospheric pollution (noise, acid rain, PM and global warming);
- Pesticides residues
- Simplified measurement of toxic substances in water samples;
- Cadmium, lead, arsenic and boron in water samples;
- Analysis of PCBs



LABORATORY PRACTICE

☀ Kobe University

- Basics of Enzyme Immunoassay
- Direct Competitive Immunoassay
- Indirect Competitive Immunoassay
- Cross-reactivity of ELISA
- Quantitative analysis with ELISA kit for environmental pollutants
- Preparation of reagents for ELISA
- Application of ELISA method for pesticide residue analysis
- ELISA vs. HPLC method
- Analysis of pesticide residue in river water

SUBJECTS MOST USEFUL TO SOLVE ENVIRONMENTAL PROBLEMS IN MY COUNTRY

✳️ **Persistent Organic Pollutants (POPs)**

✳️ **Pesticides**

✳️ **Dioxins**

✳️ **Analysis of environmental chemicals**



☀ Reduce the pollution involving a wide range of chemicals (and therefore the exposure)

☀ State-of-the-art in analytical techniques and high resolution equipment

☀ Available new technologies and methods for preliminary screenings

☀ Environmental Risk Assessment

☀ Risk communication and technology transfer among all levels.

ACTION PLAN

Objective

- Monitoring of remainders of pesticides in soil and water
- Analysis of remainders of pesticides in agriculture products
- Control remainders of pesticides in products for export
- Development of evaluation techniques and remediation of paddy field and contaminated water.

ACTION PLAN

- Presentation of the proposal Action Plan to the University and Santa Cruz Prefecture
- Look for possible sources of financial funding and collaboration
- To compile information about methods, analysis techniques
- Identify monitoring points and design sampling system
- Transfer and disseminate the acquired knowledge in the current and future training programs offered by the U.A.G.R.M

CONCLUSION

To make reality this action is very important for Bolivia and specially for Santa Cruz, because as it mentions the agriculture production very significant for my country; at the same time, we giving to know to the farmers about the conditions in which ones they are cultivating their products and the effects that the contamination by pesticides has in their fields, products and health; besides with the implementation of this laboratory to analyze pesticides, the government of Bolivia will has a tool that helps it in the control of POPs, in soil, water and vegetable. This is a way to help with the fulfillment in the Stockholm agreement signed by my country.

**THE FUTURE OF THE
FOLLOWING GENERATIONS
IS IN OUR HANDS**

**LET US PROTECT THE
ENVIRONMENT**



THANKS

**To the Government and Japanese people of through JICA
and JICE and Hyogo Prefecture.**

**Hyogo Prefecture Technology Center for Agriculture ,
Forestry and Fisheries**

Kobe Quarantine Station

**Hyogo Prefecture institute of Public Health and
Environmental Sciences**

**Kobe University, course leader , course officer and course
coordinator Kojima san for her effort guiding and helping us .**







DOMO ARIGATO
GOZAIMASHITA

