

## 2018 Re- inventing Japan Project (Long Term)

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### I. Introduction

In the following essay, I will tell about the academic activities carried out in NODAI, either in the classroom with the courses I took as well as the activities carried out in the laboratories that were assigned to me and also to another laboratory that I attended and with which I had the opportunity to make field visits. In addition, I will tell about activities and trips in which I learned more about Japanese culture and the beautiful nature of that country. Finally, I will give a brief explanation about the ERECON internship and about the objectives achieved at the end of this academic exchange

### II. Academic experience.

During the study period, I had the opportunity to take 6 courses among them: Agricultural Scientific English for International Cooperation, Agro-Environmental Engineering, Ecology and Food Production, Agricultural Trade, Comparative Developing Agriculture and Molecular Biology and Biotechnology in which I learned a lot.

#### 2.1. Agricultural Scientific English for international Cooperation.

In this course, we saw several chapters about sustainable agriculture; we analysed different aspects among them plant genetics, the use of transgenic and their impact on the environment, the different forms of agriculture, and the study of plants at a molecular and physiological level. In all the chapters after the explanations, we proceeded to a brief debate answering some questions on the subject.

#### 2.2. Agro environmental Engineering

In this course, we saw techniques of water harvesting, on the loss of water in the watersheds, to calculate these losses, on the management of hydraulic systems in Japan, on the problems of desertification and its relation with the precipitation of the zones and the

misuse of waters in agriculture. However, not only did we see issues related to agriculture but we also had some classes on pavement and concrete functions in the streets of Japan. We also had the opportunity to use the Landsat 8 program and work with some satellite images in the computer labs to identify areas of crops, water areas, housing areas, etc.

### 2.3. Ecology and food production

For this class the themes were based on the book: Agroecology: A transdisciplinary, participatory and action-oriented approach, in which topics such as the origins of agroecology, its relationship with socialism of the time, its struggle to achieve a sovereignty between farmers in front of the big transnationals and commercialization of chemical products and industrialization as a consequence of the green revolution. In addition, chapters were also played explaining experiences of agro ecological farms with different crops and not only in Japan but in other Asian countries.

### 2.4. Agricultural Trade

Here we saw several cases of export and import between European countries and Japan, the classification of the types of international agreements, the world organizations that ensure compliance with the rules between these agreements. We not only saw the processes between these agreements, but also the clauses between free trade agreements, the sanitary rules that must be fulfilled. The methodology was to analyse different examples of cases between countries where we analysed which were the correct measures that should be done or which were the problems that should be considered.

### 2.5. Comparative developing Agriculture

In this course, we saw the different forms of agriculture and extension projects in several Asian and African countries. We learned the different perspectives of agriculture and food between different countries in the world; we had special classes where JICA projects were explained in which the development of agricultural techniques was promoted to improve the farmers' production.

### 2.6. Molecular Biology and Biotechnology

We started the course with a historical introduction to molecular biology, and during the course, we saw different topics of plant physiology such as plant hormone functions in

the plant, protein interactions to identify different types of pathogens, the molecular pathways of photosynthesis between others. We could also learn about animal molecular physiology and biology, where we saw issues of genetics, gamete reproduction, DNA inheritance and more. We also visited a university establishment where they had small greenhouses with improved plants

### III. Work in Laboratory.

During the time of exchange I was assigned 2 laboratories belonging to the department of nutritional science and food safety, in which I spent the first three months in the laboratory of Professor Iwatsuki, where he once taught me the work they did on the study of taste buds through experiments with tongues of small mice from which extracted a part which was essential for future research on senses and tastes. In addition to this research, they had another research project in which they saw the functions of collagen in the skin making experiments with mice and the diets they had.

In the next two months, I was assigned to Professor Akuzawa; in this laboratory, I had the opportunity to help one of the students in charge, in the PCR process of two varieties of strawberry, as well as helping a student in her research work preparing samples of microorganisms.

Not only did I have the opportunity to attend my assigned laboratories, thanks to a fellow RJP member, I was able to attend the Food and Agricultural culture and Policy laboratory she was attending. In this laboratory, we worked with Professor Hara, who helped us a lot not only in academics but also in our stay in Japan, with which I am more than grateful. We had weekly sessions where we discussed different chapters of the book: "A Turning point of Women's Families and Agriculture in Rural Japan" which deals with the entrepreneurship of diverse Japanese women in agriculture, the role they fulfil both in the farms and in the feeding not only of their families, but also of the entire community. In addition to this, the teacher took us to three field trips where we learned a lot about agriculture, which I will explain in the next point.

#### IV. Field Trips

Like, I mentioned earlier thanks to Professor Hara we had the opportunity to go out 3 times.

The first was a visit to MK Farm, in which we interviewed the owner of this company that produces and distributes canned vegetables in roads markets near where she lives. We went to the place where she has her workshop in which she and her partner work. The production of their vegetables including negui, radishes, carrots and others, has them in different fields, she is responsible for the production and harvest of these crops and later in their workshop gives them added value by converting them into canned foods that contain the vegetables cut in different ways accompanied by a natural vinegar that she produces and also commercializes. It was a very pleasant visit where we learned a lot about this woman's entrepreneurship.

In the second field trip, we visited one of the facilities of the university in Isehara, these experimental fields have different fruit trees with different production and driving systems. In this visit, two professors besides Professor Hara explained the production and maintenance processes of these fruit trees, from which we learned a lot. After the explanatory guide we had the opportunity to work in the field helping the installation of white plastic to the apple bushes so that they could have a uniform color, for this we had to do weeding tasks, etc. To finish the field trip, we made substrates for the propagation of plants. It was a very enriching experience.

The third trip was to a green tea farm belonging to a family for 14 generations, in which we learned more about this crop. We appreciated some of the green tea fields that were nearby and also tasted some tea, we learned about the phenology of this plant as well as its production and marketing. Not only did we have the opportunity to learn, but also to participate in a workshop for the elaboration of ecological rafts made from green tea oil, a very nice experience.

In addition to the laboratory outings, thanks to another partner of the RJP program, which invited me to accompany her, I was able to visit a Renkon farm of Engineer Nakazawa. The visit lasted two days and one night, in which we carried out various activities, such as: the renkon harvest, which was very difficult because these plants grow with a lot of

water (in mud conditions), harvesting their roots that are the renkon was made with a special machine that was managed by the farmer in charge and another student of NODAI. We also had the opportunity to work in the post-harvest area doing the washing, cutting and packaging of the harvested renkon.

The experience in this farm was very enriching, we learned a lot from this crop and from Japanese food.

Thanks to the RJP coordinators, we were able to visit the Plenus Company where we were given a talk about rice cultivation in Japan and its importance in everyday food for the Japanese inhabitants. We also explained about this company and the different restaurants they have. At the end of this visit, we could appreciate the drawing that represents the whole process of cultivation, production and harvesting of rice.



Photo 1 Weeding labour.



Photo2. Professor Hara, Sol Martinez and Kemberley Hoyle in the field trip



Photo 3. Renkon roots in the post harvested area

## V. Cultural exchange.

During the 5 months, we had the opportunity not only to know the city of Tokyo, but also to be able to make small trips and learn more about Japan. We had the opportunity to visit the city of Hiroshima, known for the attack it suffered in the Second World War, we learned a lot during the visit to the peace museum, which was very sad at the same time.

We visited the island of Miyajima, which was very beautiful; we met the great Itsukushima Shrine and the mountain Misen.

On other trips to nearby places, I got to know a lot of nature by hiking in Nikko as well as visiting its famous sanctuaries, visiting the city of Kamakura with the unmissable great Buddha and the sanctuary dedicated to asking for a better economic condition something I hadn't seen it before and it seemed very interesting . I also had the opportunity to visit Hakone with its incredible natural landscapes, a place full of history in which I learned a lot from the culture. We also visited the historical Shirakawa go villages, places full of tradition culture and Japanese history, an amazing place.

Finally, I was able to visit the city of Kyoto, which for my opinion was one of the most amazing experiences I had. I learned a lot about the religions that coexist among themselves such as Shinto and Buddhism, the origin of these, the practice of these for the Japanese, I also learned about some traditions they practice (I had the opportunity to go to a morning Buddhism chatting). In addition, another best part was enjoyed the wonderful views of its streets accompanied by a beautiful landscape full of mountains and forests, visiting countless temples and shrines in which I was constantly surprised by its beauty and the history behind them.

All these small trips left me great lessons and learnings about life in Japan, about their customs and beliefs and the way of living, they have, as they say there is nothing better than traveling to get to know the culture of that place.

I also could have the opportunity to learn about tea ceremony thank to some friends of NODAI who brought us to A very Kind Japanese women's house, who is dedicated to make tea ceremony classes. This experience taught me many things not only the ceremonious process of making and drink tea but the Japanese costume their ideas and behaviours.

The trips were not the only sources of culture of this academic exchange, the new friendships I could make in Japan helped me a lot in my day to day, I thank my lab companions a lot, which made me feel very good in those months and with which I was able to share and exchange ideas and opinions about our cultures. I especially thank my roommates who were like my family in these months with whom I shared a lot not only

about our cultures but also personally, also thank my senpais who helped me a lot and made me feel like at home.

All these friendships contributed a lot to that I can enrich myself with so many new perceptions of the world and especially of Japan.



Photo 4. Tea ceremony

## VI. Internship.

In the 5 days of ERECON internship, we learned a lot about sustainable agriculture in cases like the Satoyama system, of which we had the opportunity to visit places with this system. We also learned about the initiation of an extension and development project, we learned the steps and the proper process to be able to make a successful project. Above all, we had the opportunity to visit self-sufficient farms managed by the same inhabitants of the place where they learned a lot.

## VII. Objectives achieved and recommendations.

At the end of this exchange I can assure you that I learned a lot with the courses, about ecological and sustainable agriculture and extension projects, knowledge that I hope to apply in the future either by complementing my studies in this last year at my university or at the end of it. All the classes, experiences and trips that made me learn a lot about the Asian perspective in agriculture are knowledge that made me open my mind more about

Peruvian agriculture, and I hope I can make use of this new information either to share it with my colleagues from the university as well as using it in the field of work.

This experience not only filled me with knowledge but also a tremendous experience on a personal level where I could learn to live alone and face problems by myself, learn to live in a city with a totally different culture and always try to get it out better of it.

Finally, the recommendations that I would give to the program are that for the students who go to the exchange in the second semester of the year, a basic course of Japanese can be implemented and a greater diffusion of the Latin coffee can be done giving it more approaches not only the one of a feedback of languages but also with exchange of culture on both sides, whether from students of NODAI interested in traveling as we exchange students in which we can perhaps make small exhibitions and presentations about our country encouraging them to travel to our universities.

To conclude, I would like to thank the University of Agriculture of Tokyo and its Re Inventing Japan program and my National Agrarian University La Molina, for the opportunity to have studied at NODAI these 5 months. An experience in which I learned a lot not only in academics, as I mentioned. Thanks and I hope to contribute with this knowledge in my country or where I have to work.