



# Environmental Diplomatic Leader 環境ディプロマティックリーダーの育成拠点

科学技術戦略推進費 / 戦略的環境リーダー育成拠点形成事業

環境を外交するEDLの時代へ  
Bridging Earth and People

Newsletter

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## The 29<sup>th</sup> EDL Special Lecture

Population issues are a fundamental subject related not only to global environmental problems, but also to human rights, development and peacekeeping. The 29<sup>th</sup> EDL Special Lecture invited professor Kiyoko Ikegami, former director of the Tokyo Office of UNFPA, to examine world population issues from various perspectives. Before her presentation, she showed a short documentary film on the problem of high death rate of pregnant women in Chad. She then organized a student group discussion. Students were divided into groups and asked to give opinions on pregnant women and water safety problems from United Nations, policy-maker, and local NGO viewpoints. Based on these opinions, she suggested some solutions such as improving primary education, supporting medical equipment, and human capacity building. During her presentation, she first highlighted two population issues; the population explosion in developing countries and aging population and low birthrates in developed countries.

Then she explained the relationship between birth rate and child mortality, and how it affects people of different economic situations in different countries. Finally, she reviewed the Millennium Development Goals (MDGs) in detail and asked students to think about Sustainable Development Goals (SDGs). After her presentation, students asked questions not only on population issues but also on the activities of UNFPA and the career path of UN staff.

(Associate Prof. of EDL SUN Xiaogang)



## 第29回EDL特講

人口問題は地球規模な環境問題や人権・開発援助・平和維持などに関わる重要な課題である。6月28日に開催された第29回EDL特講では、元国連人口基金東京事務所長で日本大学教授の池上清子氏を招き、この問題をさまざまな視点から検討した。池上氏はまずチャド国の妊産婦の出産死亡問題を取材したビデオを上映した。その後、「妊産婦問題」と「安全な水問題」に焦点をあて、受講生を国連代表、国の保健担当大臣、そしてローカルに活動するNGOに分けて、異なる立場からグループディスカッションを行った。学生から出されたさまざまな意見を集約し、初等教育、医療設備の充実と医療スタッフの確保、再生可能なエネルギーを利用した病院の支援、女性の教育と地域開発といった具体的な解決策へ導いた。また講演では、国連および国連人口基金について概略を紹介した後、人口問題について、途上国の人口爆発と先進国の少子高齢化問題を取り上げ、とくに出生率と幼児死亡率の関係について先進国と途上

国の違いを説明した。さらに、ミレニアム開発目標(MDGs)の項目の一つずつ取り上げ、その内容をレビューするとともに、人口、貧困、地域間・国家間の違いなどを詳細に解説した。最後に学生からUNFPAの活動や国連職員としてのキャリアパスに関する質問がなされ、活発な質疑応答が行なわれた。

(EDL准教授 孫 曉剛)



## Report 1. Domestic Internship: Nagasaki, Isahaya, Kumamoto, Minamata

From July 7<sup>th</sup> to 10<sup>th</sup>, we participated in a domestic internship. In this academic year, there were twelve participating students from six countries (Japan 3, China 3, Vietnam 3, Eritrea 1, Laos 1, and Latvia 1).

On the first day, July 7<sup>th</sup>, we visited Nagasaki city. We had already studied the background to World War II and the atomic bombing by the U.S.A. At the Nagasaki Atomic Bomb Museum, many exhibits explained the fear of radiation from the atomic bomb that led to nuclear power and nuclear experiments by many countries. In addition, we studied the history of coal mining in Gunkanjima (Hashima), and the increases and decreases in the coal mining industry that have supported rapid economic growth in Japan. At Gunkanjima, we learned about the well-paid yet severe work conditions of workers, and the lifestyle of inhabitants.

On July 8<sup>th</sup>, we went to Isahaya city to study an outline of a reclamation project and conflicts between stakeholders. Here, we learned the history of water control in the Honmyo river at the Megane bridge, and received a geographic overview of the reclamation project from Shirakimine highland. We then listened to a lecture regarding the history of the reclamation project, the adequacy of the project and closed dike, the criteria of farmers regarding reclaimed land and the farming situation, changes to the ecological system, and the conflicting perspectives between local governments and fishermen. From observation sites on the dike road, we were able to recognize differences between pure water inside the dike and the seawater outside the dike, and considered possibilities for changing the ecological system. We found a number of foreign laborers on the large farmlands in this reclaimed land.

We also visited the Takezaki Fishermen Association with NGO (Non-Governmental Organization) persons who have advocated opening the dike gate, and heard lectures about the damage to fisheries that arose from the reclamation project. We found that not all fishermen intended to open the dike gate; some insisted on keeping the dike gate closed. We therefore learned about the complex and differing interests amongst stakeholders.

On July 9<sup>th</sup>, we went to Kumamoto and Minamata cities. At Kumamoto Prefectural Office, the people in charge gave us lectures about world trends related to the Minamata Convention on Mercury, the involvement of Kumamoto Prefecture, and the approach of the Kumamoto Prefectural Office to Minamata disease problems. The staff of Minamata city hall also gave us lectures on topics including positive approaches and difficulties for town re-development in small and middle-scale company towns that wish to pursue livability rather than economic growth and place an emphasis on connections between people. We also visited RBS Co., Ltd., which was the first company established by the PFI (Private Finance Initiative) system, and learned about composting technology for human waste and regional contributions.

At Soshisha, the Supporting Center for Minamata Disease (a foundation), Ms. Nagano presented impressive lectures and guided us around many places, for example a small museum established from a sufferers' perspective and a fishing settlement. We learned that discrimination did not arise from Minamata disease, but that it already existed and was accelerated by Minamata disease. On July 10<sup>th</sup>, we also heard about sufferers' experiences at the Minamata Disease Municipal Museum. Thus, we were able to approach the realities of the situation from the perspectives of both supporter and sufferer.

At the National Institute for Minamata Disease, representative students from the six countries measured mercury density in their hair, which is recognized as the most effective way to estimate internal mercury density. All students determined significant differences in density between sufferers and unaffected people.

Finally, we visited the Open Research Center for Minamata Studies at Kumamoto Gakuen University, and had significant opportunities to view and consult books, DVDs, and documents that are difficult to access except at this center.

We visited various stakeholders in both Isahaya and Minamata and from this, we could understand various perspectives. We had opportunities to develop our understanding not only regarding difficulties around accommodation, but also requirements for reducing barriers. This domestic internship would be valuable for students who aspire to be environmental diplomatic leaders.

(Assistant Prof. of EDL Rie MURAKAMI-SUZUKI)



Gunkanjima (Hashima)



Takezaki Fishermen Association



Minamata Disease Municipal Museum

## Report 2. The 30<sup>th</sup> EDL Special Lecture

On June 29<sup>th</sup>, Dr. Hajime Nishimura, Professor Emeritus of the University of Tokyo, was invited to present at EDL Special Lecture III "Meet the Leaders". He presented a lecture entitled "The Science of Minamata Disease". Dr. Nishimura has made significant contributions to estimating the volume of methyl mercury discharged by the Chisso Corporation through his research efforts and unique points of view. He is a specialist in science and technology, and also has an appreciation for social sciences related to technology. He has continued to research a wide range of topics.

He provided students with valuable advice for their mental preparation as scientists and researchers. First is the necessity to consider things from various viewpoints. Second is the necessity to distinguish between "information" outside of the brain and "knowledge" inside the mind. He also taught us the importance of focusing on "How problems have occurred", not on "Why problems have occurred".

With regard to Minamata disease, Dr. Nishimura gave a lecture on the estimation of the volume of discharged methyl mercury. It is impossible to measure the amount of methyl mercury already discharged from factories into

the sea. Therefore, he hit upon the idea of "reverse estimation". To begin with, he measured the amount of methyl mercury accumulated in affected people and cats. He then took account of horizontal mobility between nekton, plankton, and benthos species, the vertical habitation and mobility between surface fish, bottom fish, zooplankton, and phytoplankton, and then the coastal ecosystem relevant to feeding habits and the food chain. From there, he used the equations of the physics of diffusion and membrane transport.

Finally, he succeeded in estimating the amount of methyl mercury discharged from the Chisso Corporation, and thus contributed to clarifying the mechanisms behind mercury contamination. His wide-ranging views and flexible ideas made this "reverse estimation" possible.

This lecture included not only research topics but also many other messages and was a highly motivating lecture.

(Assistant Prof. of EDL Rie Murakami-Suzuki)





## 報告1:国内インターンシップ(長崎・諫早・熊本・水俣)

7月7日～10日の日程で国内インターンシップが開催され、日本3名・中国3名・ベトナム3名・ラオス1名・エリトリア1名・ラトビア1名の6カ国・12名の学生が参加した。

最初の7月7日の訪問地は長崎市であった。第二次世界大戦からアメリカによる原子力投下までの経緯は、事前勉強で学んだ。長崎原爆資料館では、現在の原子力発電につながる原子爆弾、数々の核実験による放射能の恐怖を、様々な展示物から認識した。軍艦島(端島)における炭鉱の歴史と日本の高度経済成長を支えた石炭産業の盛衰は、事前勉強で学んだ。現地では、当時の労働者の好待遇と厳しい労働環境、島民の生活の様子などを学んだ。

8日は、諫早市に移動した。諫早湾干拓事業の概要と関係者の対立については、事前勉強で学んだ。現地では、諫早めがね橋で諫早の水源となる本明川の治水の歴史を学び、高台から干拓事業の全体を地理的に俯瞰した後、長崎県諫早湾干拓事務所、諫早湾干拓の歴史的経緯、干拓事業と堤防の閉門の正当性、干拓地への農業者の条件及び営農状況、生態系の状態、漁業者との意見対立などについて話を伺った。そして堤防道路で、堤防内淡水と堤防外塩水の違いを目視し、生態系の変化の可能性を感じた。また大規模な干拓地農場では、実際の労働を外国人が担っている場合もあることがわかった。

また、竹崎漁港で素潜り漁について学んだ後、同漁業組合で、堤防の閉門の正当性を訴えるNGO有明・漁民市民ネットワークの方と共に、干拓事業が漁業にもたらす被害について学んだ。また、全ての漁業者が開門派というわけではなく、一部の漁業者は閉門を主張していることを知り、関係者間の利害構造の複雑さを認識した。

9日は、熊本市及び水俣市に移動した。熊本県庁で、水俣に関する水俣条約の世界の動向と熊本県としての関与、水俣病について県の取り組みのレクチャーを受けた。次に水俣市に移動し、水俣市の担当者から、企業城下町である中小規模の都市が、経済成長よりも住みよさを追求し、人のつながりを重視したまちづくりのモデルを目指して積極的に取り組む姿勢を学ぶとともに、その困難さも学んだ。また、その一環として日本で初めてのPFI方式で設立された尿尿を堆肥化するRBS社を訪問し、同社の技術及び地域貢献について学んだ。

次に、水俣病の被害を受けた人々をサポートするために設立された一般財団法人相思社の永野氏を訪問し、レクチャーと被害者の視点で設立された資料館と漁業地区の見学から、水俣病によって差別が生まれた

のではなく、元々存在した差別構造にチツソが拍車をかけたことを学んだ。翌10日の午前中にも水俣市水俣病資料館で経験談を伺うことで、支援者と被害者の両サイドから併せて、現実により深くアプローチすることができた。

国立水俣病研究センターでは、体内の水銀濃度を知るために最も有効な手段とされる毛髪中の水銀濃度を測る実習を行い、通常状態と、水俣病患者の水銀濃度の違いを体感した。最後に熊本学園大学水俣学研究センターで、入手困難な書籍、DVD、資料などを閲覧し、帰路についた。

諫早及び水俣ともに、様々な利害関係者を訪問することで、異なった見方に触れることができた。調整の困難さを理解するだけでなく、障害を軽減するために必要な事項についても考える機会に恵まれ、環境リーダーを目指す学生にとって有意義な実習となった。

文責:EDL助教 村上(鈴木)理映



諫早湾堤防道路



諫早湾干拓農地



RBS社(尿尿堆肥化)



百間排水口

## 報告2:第30回EDL特講

6月29日、東京大学名誉教授の西村肇先生から「水俣病の科学」のタイトルで講演をいただいた。西村先生は、根気強い研究の積み重ねとユニークな着眼点から、画期的なメチル水銀の排出量推計に貢献された方である。また、科学技術の分野だけでなく、それと結びついた社会科学にも造詣が深く、幅広い角度から研究を続けられてきた。

まず、同じ場所の近景、遠景、拡大図の様々な地図を例に、物事を多面的に捉える必要性、頭の外にある「情報」と心の中にある「知識」の違いを区別する必要性など、科学者・研究者としての心構えについて、貴重なアドバイスを下された。また、問題の発生に対して「なぜ起こったか」ではなく「どのようにして起こったのか」という発想で取り組む重要性も教えて下された。

水俣病については、メチル水銀の排出量推計についての講義が行われた。既に工場から海に排出されたメチル水銀の量を測定することは不可能である。そこで西村先生は、「逆推計」を考え出した。まず被害を受けた人や猫の体内に蓄積されたメチル水銀量を測定した。また、プランクトン、底生生物、遊泳生物の間での水平的移動、海面魚、底魚、動物プランクトン、植物プランクトンの間での垂直的な居住と移動、さらには食性と結びついた沿岸の生態系と食物連鎖を考慮した。その上で、水中でのメチル水銀の拡散運動や膜輸送などの物理的法則を用いた。

西村先生は、この「逆推計」によって、チツソから排出されたメチル水銀量の推計に成功し、水銀汚染のメカニズムの解明に大きく貢献された。西村先生の幅広い視野や柔軟な発想が、この逆推計を可能にしたと言える。

研究自体だけでなく、多くのメッセージが含まれており、示唆に富む講義であった。

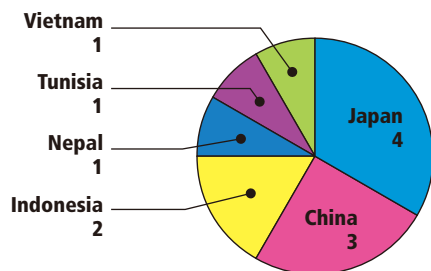
研究自体だけでなく、多くのメッセージが含まれており、示唆に富む講義であった。

(EDL助教 村上(鈴木)理映)

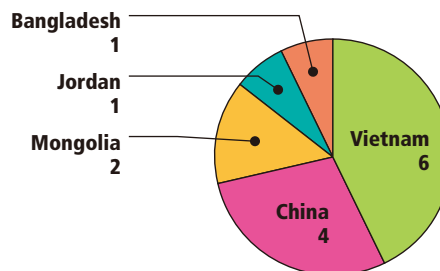


## EDL graduates

9 master's program students and 3 doctoral program students were awarded "Environmental Diplomatic Leader Certificate" in March 2013.

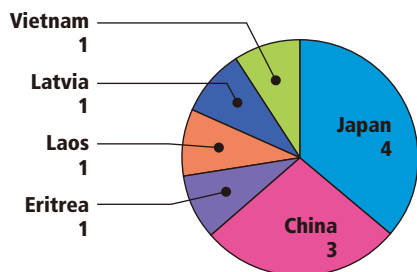


10 master's program students and 4 doctoral program students were awarded "Environmental Diplomatic Leader Certificate" in July 2013.



## EDL new candidates

11 new members were selected EDL candidates in April 2013.



## EDL修了生 EDL Alumni



**Anis CHEKIRBANE, Ph.D.**  
Assistant Professor  
Water Researches and Technologies Center  
Borj Cedria Technopark  
Tunisia

When I was asked by Professor Tsujimura to think about applying for the EDL program in early 2010, I quickly noticed that it as an opportunity to develop my knowledge in the environmental sciences.

The EDL curriculum is unique because it covers a wide range of environmental issues, and it strengthened my communication and negotiation skills. The program succeeded in combining fundamental environmental sciences with decision-making skills, and this helped me

build new competencies and talents which are capable of solving complicated environmental problems and providing green solutions required for environmental sustainability.

The different backgrounds and nationalities of the EDL students is also one of the key reasons for the program's success. The EDL debate sessions that we organized facilitated our interaction, enabled us to share knowledge for mutual benefit, and enhanced our communication and negotiation skills. We were aware of the importance of keeping in touch, both with each other as well as with the University of Tsukuba, since global environmental issues need strong networks to enable collaboration and collective problem-solving.

I am proud to have graduated from the University of Tsukuba in Japan with advanced knowledge of environmental issues, and with competencies which are actually helping me to take a leadership role in solving some of the numerous environmental problems in my country.

I want to express my gratitude to the Strategic Funds for the Promotion of Science and Technology, Professors and staff members of the EDL Program and the University of Tsukuba for giving me the opportunity to become an Environmental Diplomatic Leader.

## 今後の活動 Forthcoming Events

今後の予定

8月

26-9月7日 海外インターンシップ(ケニア)

9月

1-12日 海外インターンシップ(インドネシア)

14日 環境リーダー合同会議2013

19-27日 海外インターンシップ(フランス・チュニジア)

Forthcoming Events

August

26-Sep.7 International Internship (Kenya)

September

1-12 International Internship (Indonesia)

14 Joint Congress of Environmental Leader Program 2013

19-27 International Internship (France-Tunisia)



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