

研究結果報告書

大連市循環型社会構築における中日協力の可能性

所属：大連外国語大学 日本語学院

役職：准教授

氏名：王 恵賢 （他 2 名）

本研究は、環境問題が喫緊の課題とされつつある中国における都市生活固体廃棄物の処理の問題を取り上げ、その解決に不可欠な産官学協同システムの構築を目指し、まず大学の果たすべき役割を中心に議論を行った。

現段階の中国において、地方自治体などの政府部門が生活固体廃棄物処理の主な担い手として働いており、続出するさまざまな財政問題、社会問題、技術問題、環境問題などの対処で途方にくれ、国民の間で厳しく指摘されている。このような状況を打開するには大学の果たす役割は大きいと欧米諸国の経験で明らかになったが、中国では、環境問題の解決や環境産業の育成における大学の役割は未だに重要視されておらず、その先行研究も十分とは言えない。

具体的に、大学の果たすべき主な役割は、以下のようにまとめることができる。まず、優れた人材や設備を備え持つ大学は、環境技術の開発や専門人材の育成ばかりではなく、循環型社会構築の前提といえる情報の収集、整理、分析、社会への発信などの面において高く期待されている。

また、個別企業の利益を超えた大学のやや中立的な立場は、環境領域における産官学協同システムの構築における人材、技術、情報の交流を円滑に推進するメリットも持ち、その人的ネットワークの役割は重要である。

さらに、特に先端技術の導入を多く行われてきた中国において、技術導入で大きな成功を抑えてきた日本のように、導入技術の選択、導入技術と導入企業とのマッチング、導入技術の消化吸收などの面における大学の役割は、これからの産官学連携の重要な内容である。

最後に、在学生のほとんどが集団生活を送る中国の大学は、人口密度のきわめて高い「団地」とも言え、その団地の廃棄物の特徴をしっかりと把握し、ふさわしい処理方法や環境保護ルートを開発を促進させる一方、実際の廃棄物の処理に学生を参加させるのは、学生の環境意識の養成や環境にやさしい生活習慣の育成に重要な意味を持つ。実際に、本学においてもこの研究をきっかけにさまざまな環境活動が新たに実践されてきた。たとえば、学生の間で環境保護についてのアンケート調査コンテストを行う、環境保護に興味のある学生により質の高い卒業論文を書いてもらうよう支援を提供する、2014年度から毎年11月を「環境月間」とし、環境保護広告設計コンテストや廃棄物を使っの DIY コンテストなどを行う、などの活動に力を入れている。

本研究が力を入れているもう一つのことは、日本が中国に与える示唆や協力の可能性を探ることである。したがって、中国の実態を把握するため、大連外大を例にアンケート調査を行ったほか、普通の4人家族の家庭ごみの状況を記録し、仮に分別収集ができた場合のごみ量の減少を計算した（現段階は混合収集）。また、外資企業が多く立地する大連高新園區において、特に電池の廃棄状況について実地調査や聞き取り調査を行い、インフラの不備に驚き、外資企業が「環境のお手本」になってくれるまでは、まだ長い道のりが必要だと痛感している。さらに、政策関係者からは、「海岸資源や生態の保護、公共場所の標識の設置など」は当面の急務であるとの意見があった。上記問題の解決法を探るべく、日本訪問では、公共場所における環境保全への努力、標識の設置法や標識語の書き方を中心に考察した。日本で得たこれらの資料を大学の授業に活かすことで、少しでも日本の環境理念を次世代の中国に浸透してもらうよう努めている。

研究成果の公表について(予定も含む)

口頭発表（題名・発表者名・会議名・日時・場所等）

申請者王恵賢は、大連外国語大学日本語学院の学生を対象に、環境知識を宣伝し環境保護を促進するためのキャンペーンを開き、「環境保全のために、大学のできること」という口頭発表を行った（2014.9）。

論文（題名・発表者名・論文掲載誌・掲載時期等）

題名：都市の生活固体廃棄物の協同処理システムにおける大学の役割

（中国語名：高校在城市固体生活废弃物协同处理机制中的作用）

発表者名：王恵賢・李経緯

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COMPLETION REPORT

Possibility of Sino-Japan cooperation in building the recycling-oriented society in Dalian

Dr. Wang Huixian (+2)

Associate Professor

School of Japanese Studies

Dalian University of Foreign Language

In Recent years, environmental issues become one of the most important problems in China. This study took up one of the environmental issues – the disposal of Municipal Living Solid Waste(MLSW), especially centered on the construction of Government-Industry-University Cooperation System which is considered indispensable in the settlement of MLSW problems. As the very first step, this study discussed the role that universities should play in the cooperation system.

Recently, the MLSW treatment in China has been mainly carried out by local government which is severely commented by the people because of a lot of problems such as the financial problems, social problems, technical problems and environmental problems, and so on. So it is considered that it is difficult for the local government to handle with MLSW problems more efficiently than before under the current mechanism. It is evident that the European and American universities have played an important role in the settlement of environmental issues and in the improvement of such a situation. But the role of the universities in environmental issues and in the upbringing of environment industries isn't esteemed yet in China, and it can't be said that the preceding study is enough.

Concretely, the main roles of universities in environmental fields can be concluded as following. First, most of the universities have excellent human resources and be well-equipped, so not only the development of environmental technologies and talent-training, but also the information collection, analysis and transmission considered as the base of circular society is expected to be achieved by universities.

Secondly, comparing with the profit-oriented enterprises, the universities are relatively in a neutral position, which can make it more easily for the universities to improve the communication of talents, technologies and information when a Government-Industry-University Cooperation System is established in the environmental domain. In other words, the universities can play a very important role of human network.

Thirdly, in the field of technology-introduction, it is highly necessary for China to learn from Japan which has got an excellent achievement in so many areas. For example, the mechanism of technology selection, the matching between the introduced technologies and the acceptance enterprises, the digestion and improvement of introduced technologies, and so on. In these areas, Japanese universities have played an important

irreplaceable role, and it is said that the success of Japanese technology-introduction will not be available without its universities.

Finally, most of the Chinese universities can be called as a kind of housing complex with high population density because most of the students live in the dormitories and have a group life. So it is important to grasp the situation of the wastes in order to develop suitable methods and routes of wastes disposal. At the same time, participation by the students in the above process can help them form an environmental awareness and eco-friendly lifestyle. Actually, a lot of environmental activities have been carried out in my university triggered by this study. For example, we had a questionnaire survey contest on environmental protection between the students, and offered supports to the students interested in environmental protection in order that they could write graduation thesis with higher quality. And in the Environmental Month started from November 2014, an environmental-protection-advertisement-design contest and a contest of DIY goods using wastes were performed.

Another key issue that our research emphasized is to explore the possibility of inducing experiences of Japan into China. To know the real situation of China in this regard, in addition to implement a survey in Dalian University of Foreign Languages, we also collected data on household waste for a four-member family, estimated how much waste could be reduced if garbage classification were implemented. Furthermore, we conducted a field survey on treatment with used batteries in Dalian High-Tech Zone where many foreign companies are located. Surprisingly, it seems there is a long way to go for those international companies to become role models in environmental conservation. Additionally, we were also informed by policy-makers of the necessity to protect seacoast resources and coastal ecosystem, establish publicity board. For searching methods in Japan to solve those problems, our visiting to Japan surveyed ways of improving public awareness on environment, legal measures on establishing publicity boards, contents of publicity boards. Experiences and data from Japan have been employed in our classroom; we hope our work could play a role in training environmental awareness of next generations.

Publication of the Results of Research Project:

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, etc) : A presentation titled of “what can a university do in the environmental protection” for the students of School of Japanese Studies, Dalian University of Foreign Languages in September, 2014.

Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)

Wang huixian and Li jingwei: “the role of universities in the cooperation system of municipal living solid waste disposal, “ Education Teaching Forum, 3:42-43(2015).

Book (Publisher and Date of the Book, Title and Author of the Book, etc.) :

N/A