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Form 7

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Research Report

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Organization (at the time of the grant)**:** **Kanazawa University, Ishikawa, Japan**

Title of Research: ***"Sino-Japanese Relations and Rare-Earth Elements (REEs) – A Cause for Concern or a Cause for Hope?"***

Purpose of Research:（400 words）

This research aimed to examine whether the REE issue is a cause for concern or a cause for hope for Japan and China. It also examined the ramifications of this issue, and gave significant attention to seabed REEs. It then made proposals for reducing REE-related tensions and for possible enhanced bilateral co-operation. The significance of this research is reflected in the fact that maritime issues are an increasing source of tension between Japan and China and are among the few areas where the security interests of both countries intersect in close physical proximity to each other on a day-to-day basis. These areas are also some of the least explored high-potential resource areas located near large markets. Both states understand that their optimal bilateral relationship would be one that is economically prosperous, co-operative, and peaceful. With regards to REEs, this research examined how Tokyo and Beijing could possibly receive maximum utility from terrestrial (in the case of China) and seabed REE resources for example. It attempted to determine where the REE debate is located today in terms of bilateral relations as well as the likelihood of a mutually agreed compromise of some sort in order to peacefully exploit the full potential of the available resources. The paper also looked at the possibilities of REE-related technological co-operation and of joint efforts to mitigate the environmental impact of REEs. Through this, the research aimed to contribute to mutual understanding and possible enhanced bilateral co-operation over an issue of key importance to East Asia. The paper's lessons and findings also presented insights and suggestions for the resolution of similar REE-related disputes elsewhere. The research made a contribution to a topic, in particular its maritime aspect which hitherto remains very under-researched because technological progress in maritime exploration of seabed REE is

advancing very fast while social sciences have hardly noticed these developments.

Content/Methodology of Research:（800 words）

The research set out to investigate and explain a number of points, some include for example: a) why have incidents of tension between Japan and China over REEs increased in recent years?, b) what are the challenges to enhanced REE-related co-operation?, c) is greater REE-related co-operation possible? d) is the issue of accessing REEs (especially seabed REEs) a manageable issue in terms of the stability of wider bilateral relations?, and e) is the extraction of maritime REEs an economically feasible endeavor?

Methodology

The research's plan was mostly qualitatively based, and rested on the collection of primary source data (ex. interview material, government statements, newspaper articles, energy briefs, defense white papers etc.) as well as secondary source data in order to analyze the differing perspectives regarding Japan-China relations and REEs (with significant attention given to seabed REEs). The timeline in which the research was completed was as follows:

Chronology:

January – April 2015 – Commencement of the collection of primary source printed data relevant to Japan-China relations and Rare Earth Elements (REEs).

May – August 2015 – Extensive review of books, journal articles, and other documents pertaining to Japan-China relations and REEs. English language versions of Japanese, Chinese, and third party sources were reviewed in order to analyze the divergence of views regarding Japan and China goals and objectives vis-à-vis REEs (as well as a number of Japanese and Chinese language documents). A research assistant and translator were recruited for the purpose of translating and explaining a variety of Japanese and Chinese language documents (as well as completing other research tasks). From this review, a better grasp of China and Japan's positions on the issue was achieved. In addition, interviews in person, via email or telephone with Japanese, Chinese, and other third party scholars were conducted in order to collect original and distinctive views regarding this particular research theme.

September – December 2015 – Writing Up period. This period was utilized to write up the first drafts of my research findings. The time was also used to receive feedback on points made and information used in the initial drafts of the research. Then, finalization of the research findings into a format suitable for publication as a document on its own or else as a document that could form part of a larger publication at a later stage.

At present, the research paper draft has a word count of approximately 12,000 words and is composed of the following sections. The section titles below are largely self-explanatory:

1. *Introduction to Research*
2. *What are Rare-Earth Elements (REEs)?*
3. *Sino-Japanese Relations and Rare-Earth Elements (REEs) – Historical Background and Significance*
4. *Heightened Tensions in Recent Years (2010 and beyond)*
5. *Rare-Earth Elements (REEs) in Maritime Areas*
6. *A Cause for Concern?*
7. *A Cause for Hope?*
8. *Looking to the Future*

A brief sample of the types of English language sources used in the paper include the following:
(For a more comprehensive list of sources including Chinese and Japanese language sources, please contact the author of this paper).

- Blakely, Christopher *et al* (September 2012), 'Rare Earth Metals and China', Gerald R. Ford School of Public Policy, http://sites.fordschool.umich.edu/china-policy/files/2012/09/Rare-Earth-Metals-China.pdf
- Humphries, Marc (16/12/2013), 'Rare Earth Elements: The Global Supply Chain', Federation of American Scientists (FAS), CRS Report for Congress (7-5700 / R41347), Congressional Research Service (CRS), https://fas.org/sgp/crs/natsec/R41347.pdf
- Hurst, Cindy (March 2010), 'China's Rare Earth Elements Industry: What Can the West Learn?', Institute for the Analysis of Global Security (IAGS), http://www.iags.org/rareearth0310hurst.pdf
- Hurst, Cindy (15/03/2011), 'Common Misconceptions of Rare Earth Elements,' Journal of Energy Security (Online), http://www.ensec.org/index.php?option=com_content&view=article&id=290:common-misconceptions-of-rare-earth-elements&catid=114:content0211&Itemid=374
- King, Hobart (2015), 'REE - Rare Earth Elements and their Uses', Geology.com, http://geology.com/articles/rare-earth-elements/
- Lecarte, Jacques (18/07/2013), 'China's export restrictions on rare earth elements,' Library Briefing 130357REV1, Library of the European

Parliament, http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2013/130357/LDM_BRI(2013)130357_REV1_EN.pdf
- Seaman, John (October 2012), 'Rare Earths and the East China Sea: Why hasn't China embargoed shipments to Japan?', the French Institute of International Relations (Ifri) and the Canon Institute for Global Studies (CIGS), Ifri-CIGS Op-Ed Series, http://www.canon-igs.org/en/column/pdf/121009_seaman_oped.pdf
- Webster, Graham (12/05/2011), 'Rare Earth Elements, Asia's Resource Nationalism, and Sino-Japanese Relations - An interview with Yufan Hao and Jane Nakano', The National Bureau of Asian Research, http://www.nbr.org/research/activity.aspx?id=137

Interviews and Correspondence via email:

Interviews

Japan

- Ike, Tsuyoshi, Manager, Information Analysis and Research Department, International Affairs Group. Sumitomo Shoji Research Institute Inc. in Tokyo.
- Kawamura, Sumihiko , Rear Admiral Japan Maritime Self-Defense Forces (JMSDF) Retired, Deputy Director, Okazaki Institute in Tokyo.
- Takahara, Akio, Professor, Graduate School of Law and Politics, the University of Tokyo.

China

- Cheng, Xiaohe, Professor, School of International Studies, Renmin University of China in Beijing.
- Su, Hao, Professor, Director, Center for Asia-Pacific Studies, Deputy Director, Center for International Security, China Foreign Affairs University (CFAU) in Beijing.

Correspondence via Email

- Kato, Yasuhiro, Professor, the Department of Systems Innovation, School of Engineering, University of Tokyo.
- State Oceanic Administration (SOA), China Institute for Marine Affairs (CIMA), in Beijing.
- Takaya, Yutaru, Professor, Department of Resources and Environmental Engineering, Faculty of Science and Engineering, Waseda University, in Tokyo.

Conclusion/Observation（400 words）

Despite an improvement in bilateral ties in the past year, the research found that there is a low expectation of REE-related co-operation in the near future. This however does not mean that the REEs issue will trouble the relationship to the same extent of late 2010. Energy saving technology and energy conversation is Japan's strong point and China is attracted to the potentialities and possibilities of

Japanese technology in terms of China's drive to reduce environmental damage and resource use inefficiency, particularly in relation to its land-based Rare Earth Element production sites. If Chinese companies are willing to pay the requested price then certainly collaboration and co-operation in the field of REEs is a possibility. REEs have fortunately become less of an issue between the two countries. A key reason for a reduction in bilateral tensions related to REEs exports since 2010 is the advances that Japan has made in diversifying its supply sources for Rare Earth Elements (REEs) as well as its REE recycling technology. A number of Japanese sources cited the alleged restrictions placed on REE exports in late 2010 in the aftermath of the September 2010 boat collision incident in the East China Sea as the key development that convinced Japan that China could not be trusted as a reliable REE supplier and that alternative ways to acquire and maximize Rare Earth Elements needed to be found. Many Japanese observers also interpreted export restrictions and other developments related to the fall-out from the September 2010 incident as further evidence of a rising China using its economic power to retaliate against Japan and to force Tokyo to moderate its position. China however rejects that REE export 'restrictions' were related to the boat collision, but rather that exports had in fact been reduced months earlier due to economic and environmental concerns. With regards to maritime REEs, the research found that Japan has made some potentially rich discoveries of rare earths in the seabed in areas such as Minami-Torishima in the western Pacific. If these resources can be extracted and utilized then they could represent a bonanza for the Japanese economy. There is a consensus amongst scholars however that extracting maritime REEs is likely to be very costly and possibly a threat to the marine environment for the short to medium term so terrestrial alternatives from reliable REE suppliers may continue to be a more economically sound option. Much will depend on the price of terrestrial REE suppliers and the stability of the international REE market. Co-operation between Japan and China with regards to maritime REEs is less likely than co-operation with regards to land-based REEs as a result of volatile and fluctuating tensions between the two neighbors over disputed maritime territory, freedom of navigation, and Exclusive Economic Zones (EEZs) in areas such as the East China Sea, the South China Sea, and in the western Pacific (see Okinotorishima for example).