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Rare Earth Elements, Asia's Resource Nationalism, and Sino-Japanese Relations

An interview with Yufan Hao and Jane Nakano

By Graham Webster
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In recent years, the vast majority of rare earth elements—critical resources for clean-energy technology and high-tech manufacturing—have been mined in China. Consequently, when China briefly halted rare earth exports to Japan following a fall 2010 confrontation in the East China Sea, many observers debated whether China was attempting to gain political and diplomatic leverage over Japan or acting based on domestic concerns. Following its annual Energy Security Conference, NBR spoke with Yufan Hao of the University of Macau and Jane Nakano of the Center for Strategic and International Studies to gain greater insight into this issue.

As leading scholars in the rare earth elements debate, Hao and Nakano explain how China came to dominate the production market for rare earth elements, the impact that this dominance has had on regional economic and political relations, and the implications for regional resource nationalism. This interview was published on the NBR website: http://www.nbr.org.

Rare earth elements are distributed quite widely across the planet, but China has become far and away the largest producer and exporter of these resources. How did this happen?

Yufan Hao: Up until the late 1980s, the United States was the dominant supplier of rare earth elements, but beginning in the early 1970s, China began to pay attention to rare earths as one of its strategic priorities. Largely due to low-cost labor and very lax environmental standards, China's production increased dramatically, with an annual growth rate of 40% from 1978 to 1989.

Rare earth minerals, as you point out, are spread out across the world, but not in every country. Countries in Latin America, Southeast Asia, and Central Asia, as well as Australia and the United States, have reserves, but China's reserves are larger.

With oil and other resources, there is a difference between "proven reserves" and the actual amount of the resource in the ground. How much of China's leading position is due to greater exploration?

Hao: Indeed, there might be more resources elsewhere, but they are not yet identified. Many other countries may have reserve potential that has not been realized by exploration. The Chinese rare earth resources we are talking about are confirmed.

Jane Nakano: I know that in the past few years, potential reserves in countries such as Vietnam and Malaysia have been getting more attention. The Japanese government and other governments have been looking for other recoverable reserves, for example, in Central Asia.

For now, China is the largest producer. Meanwhile, Japan is the largest consumer of rare earths. What gives Japan this unique position?

Nakano: There are largely two sectors that rely heavily on rare earth elements. One is the defense industry, where they need rare earth minerals for various cutting-edge weapons technologies. The other is clean-energy technology, where rare earth elements are essential—for instance, in manufacturing electric vehicles. There are some elements that may have substitutes, but in general these substitutes are very expensive to develop.

Many countries rely quite a bit on Chinese supplies. The degree of reliance depends upon where each economy sits along the supply chain. Clean energy and advanced electronics manufacturers such as Japan and South Korea are closer to the rare earth refining stage in the supply chain than other economies, such as the United States.

If one reason China has developed these resources more than others is lax environmental regulation, what kind of environmental impact does extraction of rare earth elements have in China, and to what extent is this a domestic Chinese concern?

Hao: Environmental impact is one of the main reasons China has moved to reduce production and clean up the mess. Excessive production of rare earth elements has created a severe environmental disaster largely due to processing technology. Mining and processing rare earths can easily create a lot of environmental hazards if not carefully managed, and that is probably the reason the U.S. Mountain Pass mine ceased operation.

In China, production of rare earths is not tightly controlled by the state due to the so-called decentralization of enterprise reforms. This means that a lot of local private money pours into producing rare earth elements in small, privately owned enterprises that lack the technology to handle the environmental hazards. Part of China's efforts to clean up the environment is to stop issuing new licenses and to merge small factories and workshops into larger state-owned enterprises with technology able to handle production waste.

Nakano: There are generally two stages where environmental issues arise. One is the mining process, during which radioactive elements such as thorium and uranium may pose a health risk to miners. Then there is the refining process, where toxic acid is traditionally used in China.

Looking at the numbers, however, I cannot be entirely sure whether the production has been reduced, as Dr. Hao indicated. There is no global rare earth market a la the oil market. Also, there is no central/global repository of information on rare earth production or trade. So there is

obviously conflicting data out there. But some statistics indicate that production levels have been higher than the mining quotas, which have been rising.

So the mining quota is increasing, but the export quota has been dropping?

Nakano: That's right from what I understand.

Hao: Part of the reason for this is that domestic demand has increased, so production may remain high while exports decrease.

Many readers may not have been aware of the importance of rare earth elements and the market dynamics until fall 2010, when Chinese exports to Japan stopped briefly during a tense political period set off by an incident involving disputed islands in the East China Sea. The relationship between Japan and China has traditionally been described as warm economically and cool politically. Does the 2010 incident show that there may be a stronger link between economic and political issues in Sino-Japanese relations than previously believed?

Hao: The China-Japan relationship is quite complicated, and it is largely overshadowed by historical issues. There is also a public sentiment in China that makes anything related to Japan emotional. So warm economic relations is not exactly how I would describe bilateral relations. Economic relations tend to be *normal*, but I wouldn't say *warm*—which is to say that economic ties have never served as a pillar for solid bilateral relations. When issues come up, bilateral relations tend to suffer, but economic relations tend to remain normal because of mutual interest. So I wouldn't say economic relations are warm, but the political aspect of the relationship can be chilly.

Nakano: I think the economic and trade relationship between Japan and China is quite robust, though this relationship is indeed haunted by what happened in the past. The question of whether there was something unique in fall 2010 is interesting. In surveying Japanese stakeholders, I think there was a sense that something they wished would stay in the economic domain—Japan's reliance on Chinese rare earth supplies—had reached into the political domain. With this issue "crossing the line," so to speak, from the economic to the political realm, there may be an interesting comparison with the U.S.-Japan relationship in the 1980s, when trade friction was quite severe. But there has never been a breach of the firewall between the economic and political realm in the U.S.-Japan relationship, where the security alliance serves as a foundation for bilateral ties. Different bilateral relationships may have a different level and type of threshold separating the divide between economic and political ties.

There was also great concern in the United States and other countries, some of which are, as you say, lower on the supply chain. How can we understand the politicization of this issue following the East China Sea incident last year?

Hao: The work in China to clean up the mess in domestic rare earth production started long before the Diaoyu/Senkaku Islands incident. Coincidentally, there was quite a public outcry against Japan during the incident, and so this was a societal factor in Chinese foreign

policymaking. The rare earths issue got involved in Sino-Japanese relations somewhat incidentally. For a few weeks, there was a halt in rare earth shipments to Japan, not what I would call an embargo, and that really provoked serious concern from the United States, Europe, and particularly Japan.

Most of the people outside China tend to view this as Chinese assertiveness, using rare earths as a weapon to pressure Japan and maybe to challenge the rest of the world. That is a misperception. I think there might have been some intentional delay of the shipments to Japan because of internal bureaucracy, but I don't think the Chinese leadership views rare earths as a weapon, and the Chinese premier and foreign minister have both said that China would never use rare earth elements as leverage in foreign affairs. Nonetheless, if perceptions outside China are different, this issue definitely will have implications in the U.S.-China relationship.

Nakano: People in the United States or in Japan may think that China has a highly efficient, cohesive decisionmaking system. The reality may be more like in most other countries, however, in that there are many voices that must be coordinated in the decisionmaking process. In the case of the halt on Japan-bound Chinese rare earth exports, it is unfortunate if it were simply that the implementation of a set of domestic policies coincided with what happened in the East China Sea. Discussions and conferences such as the Energy Security Conference can help us learn that there are many different drivers.

In general, though, Japanese stakeholders—by this I mean trade and clean-energy technology experts in the public and private sectors—had faith in the Chinese central government's ability to control what goes on even at the level of customs officials. Perhaps a more thorough review would show that this faith was misplaced, but that kind of information would probably require greater access to stakeholders in all countries concerned. If rare earths had been used to send a political message to Japan, however, this policy choice probably invited more unwelcomed, unintended consequences for China than expected.

This interview was conducted by Graham Webster, a Ph.D. student in political science at the University of Washington.