Resource Logistics as a Support Tool of Science, Technology and Innovation Policy Decision

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Scientific technologies are researched, developed, and then disseminated to the wider society under resource and environmental constraints. Resource limitations lead to the creation of new green innovative technologies, which in turn generate additional resource demands. In fact, innovations in science and technology (S&T) are important drivers of economic performance. However, we have inadequate knowledge to develop scientific and technological innovations to solve problems and to implement new social value in society. In order to facilitate innovation, it is necessary to understand the flow of resources in the supply chain and its life cycle impacts - so called â€œresource logisticsâ€•. With the increased global concerns of resource and environmental constraints of recent years, the responsibility in mining, as a constituent of social responsibility associated with resource extraction and usage, is becoming increasingly important.

In this study, we evaluated the supply chain risks behind direct and indirect resource use for Japanese economy with focusing phosphorus. This case study revealed a complex set of patterns, with some countries relying heavily on just one or two countries to meet their commodity needs, and others drawing from a wide range of sources. In many cases, a strong dependency was noted on a country which itself was heavily dependent on another source for its commodity needs directly and indirectly. Considering the economic structure and geopolitical problems, it was found that special attention should be paid to maintaining a stable supply of agricultural nutrients resources to ensure stability in agricultural production as well as in the many industries which use phosphoric acid(P) as an essential chemical materials.