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For immediate release

Kyushu University
Mitsui Fudosan Co., Ltd.
Nippon Steel Kowa Real Estate Co., Ltd.

Kyushu University, Mitsui Fudosan, and Nippon Steel Kowa Real Estate Launch Joint Research into Sustainable Future Forms for Advanced Industrial Clusters, Focused on the Inclusive Wealth Index

Tokyo, Japan, April 25, 2023 – Kyushu University, Mitsui Fudosan Co., Ltd., and Nippon Steel Kowa Real Estate Co., Ltd. ("NSKRE") today announced that they have launched a joint research project into future forms for advanced industrial clusters that contribute to sustainability.

Amid adjustments in global supply chains made in response to geopolitical risk, Japan is seeing the acceleration of strategic investment particularly in the domestic semiconductor industry and connected industries. The construction of new large-scale plants within Japan not only needs to have an economic impact on the regions in which they are located, but should also factor in neighborhood creation that will sustainably vitalize the entire region.

In consideration of this social situation, Kyushu University, Mitsui Fudosan, and NSKRE have launched joint research that aims to envision and then realize industrial clusters that can play a central role in a manufacturing industry that balances economic rationality with sustainability.

The research will focus on the Inclusive Wealth Index ("IWI") used by the United Nations since 2010, and will use Kyushu as a field region to quantify the effects created by semiconductor industrial clusters. Specifically, it will aim to visualize what kind of ripple effects are created spatially, covering a broad scope that includes not only semiconductor-related businesses such as semiconductor and semiconductor device manufacturers, but also manufacturers that include semiconductors in their final products, educational institutions that provide manpower to these businesses, and peripheral business such as logistics facilities and convenient facilities for daily life.

Through this research, the companies will gain knowledge related to the restructuring of manufacturing and logistics clusters, as well as accompanying convenient facilities for daily life and residential areas, which can be used to convert expertise into benchmarks for effectively converting land usage in the future and to contribute to the revitalization of industries and regions. Together, the three parties will formulate a scenario that envisions industrial clusters in around 2030 and Kyushu University will calculate the impact of the scenario in terms of the IWI. The three parties will then verify the scenario based on the results of this calculation and select candidate sites for actual development. Mitsui Fudosan and NSKRE will then come up with specific ideas for the development of these sites.

An advanced industrial cluster comprises the academic and research facilities as well as manufacturing locations needed to engage advanced human resources such as researchers and engineers and their living environments. In line with the times, the manufacturing industry itself now requires development that is agile and faster than ever before and manufacturing facilities need an even greater sense of urgency in collaborating with research facilities and

educational institutions. The research project envisions neighborhood creation that gives shape to industry-academia collaborations in a way that can fulfill the needs of these manufacturing facilities.

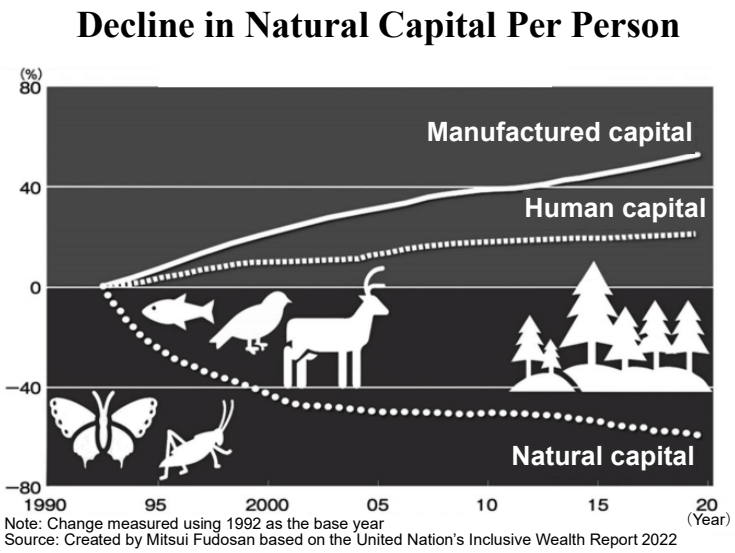
The research is primarily being led by Professor Shunsuke Managi of Kyushu University's Urban Institute. Professor Managi has a track record of using IWI in projects with multiple local governments, particularly in the Kyushu region. He is also developing methods that use AI to evaluate individual products and services from an ESG perspective and these methods are already being used in business reform efforts at multiple companies.

■About the Inclusive Wealth Index

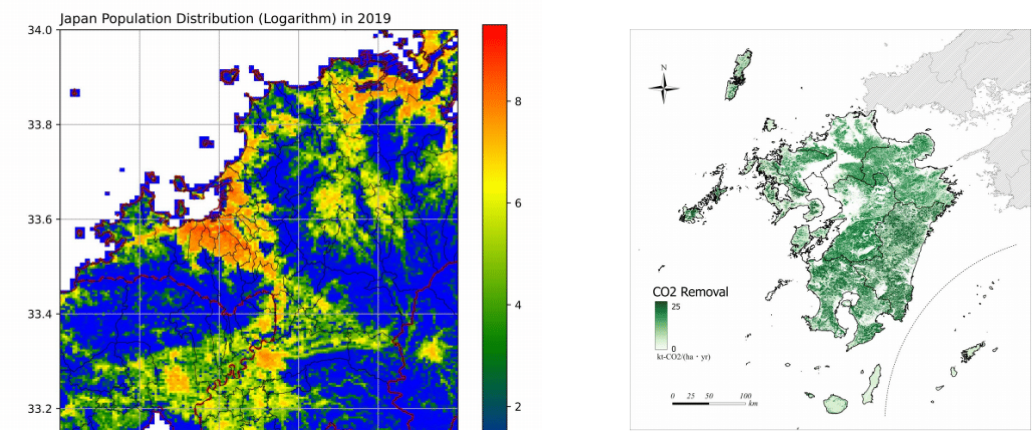
The IWI is a new index announced by the UN in 2012. It works as a complementary index to GDP with the aim of quantifying the "wealth of monetary value held by society that generates well-being for current and future generations." A regular report is issued by the UN Environment Programme. Since 2014, Professor Managi has participated in the writing of the Inclusive Wealth Report as a representative of the UN and has been at the forefront of efforts for introducing the IWI at multiple local governments, particularly within Kyushu. After introducing the IWI, each local government has been applying the index into specific initiatives.

As the IWI comprises manufactured capital, human capital, and natural capital, it takes into account factors that will have a negative impact on the future, such as natural destruction caused by development. It is therefore attracting great interest, including from an ESG investment perspective.

＜Image of IWI Applications＞



Top: A graph created by Professor Managi showing changes in each capital that comprises the IWI



Left: Linking the IWI with advanced population density image data taken from satellites enables the visualization of change in each spatial mesh
Right: An example of the spatial distribution of CO_2 absorption volumes calculated using the map on the left

■Professor Shunsuke Managi, Urban Institute, Kyushu University

1999	Completed Master of Engineering Degree at Kyushu University
2002	Completed Doctorate Degree at the University of Rhode Island Ph.D (Environmental and Natural Resource Economics)
2015	Appointed as Distinguished Professor of the School of Engineering and Director of the Urban Institute, at Kyushu University
2020	Appointed as Special Advisor to the President of Kyushu University

Professor Managi has executed collaborations with many international institutions and companies while serving in roles such as representative of the United Nations' Inclusive Wealth Report (IWR), lead author for the Intergovernmental Panel on Climate Change (IPCC), coordinating lead author of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), coordinating lead author of the UNESCO International Science and Evidence based Education Assessment, and vice-chair of the OECD Joint Working Party on Trade and Environment. He has authored 25 books, 400 academic papers, and has received many awards, including the JSPS Prize from the Japan Society for the Promotion of Science.

■Mitsui Fudosan's Industry-Academia Collaborations

Mitsui Fudosan is advancing industry-academia collaborations with the aim of taking ideas for innovation from the knowledge cultivated by universities and applying these in its business and neighborhood creation. In 2020, it established the Industry-Academia Collaboration Department and this joint research with Kyushu University follows joint research projects launched with the University of Tokyo, Waseda University, Tohoku University, and Ochanomizu University.

Going forward, it will continue to use the neighborhood creation experience it has accumulated to participate in industry-academia collaborations that find social applications for the cutting-edge research carried out at Japanese universities.

■Mitsui Fudosan Group's Contribution to SDGs

https://www.mitsuifudosan.co.jp/english/esg_csr/

The Mitsui Fudosan Group aims for a society that enriches both people and the planet under the principles of coexist in harmony with society, link diverse values and achieve a sustainable society, and advances business with an awareness of the environment (E), society (S) and governance (G), thus promoting ESG management. By further accelerating its ESG management, the Group will realize Society 5.0, which the Japanese government has been

advocating, and contribute significantly to achieving the SDGs.
Additionally, the Group formulated the following Group guidelines related to “Realize a Decarbonized Society” and “Diversity & Inclusion Promotion” in November 2021. The Mitsui Fudosan Group will continue to work toward solving social issues through neighborhood creation.

【References】・Group Action Plan to Realize a Decarbonized Society
https://www.mitsuifudosan.co.jp/english/corporate/news/2021/1124/
・Diversity & Inclusion Promotion Declaration and Initiative Policy
https://www.mitsuifudosan.co.jp/english/corporate/news/2021/1129_02/

* The initiatives covered in this press release are contributing to three of the UN’s SDGs.

Goal 9	Industry, Innovation and Infrastructure
Goal 11	Sustainable Cities and Communities
Goal 17	Partnerships for the Goals