

## Environmental Citizen Science as the Seamless Earth Science (SMLES) Policy

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Prof. Yasuo Shimazu started his research career in the dynamo theory of the earth. After that he changed his research subject to the Earth's interior physics, environmental science and regional studies. He promoted his research under the slogan of "3E Science" (Earth science, Ecology, Economy) and "3A Science" (Assessments science, Action science, Appropriate science). These phrases were clearly guiding principles of his students. The most famous slogan is "SMLES" (Seamless Earth Science = no seam earth science). It has been enthusiastically supported by a number of young earth scientists. SMLES has been used not entirely faded.

Prof. Shimazu worked at Department of Earth Sciences, Faculty of Science, Nagoya University until retirement in 1990. So, after he changed his research subject, his students were educated in the course of earth science program. Therefore almost people of his students and co-researcher thought SMLES mean the policy of seamless in science sections, geology, geophysics and geochemistry. Of course, these seams are big walls for the professional researchers.

But was he proposed "SMLES" as the borderless between the disciplines? In this study, we focused the role of Prof. Shimazu in "the environmental citizen research contest" supported by the Toyota Foundation began in 1979. This contest was citizen lead research on familiar environment by a team. In the process of each research, the team advances the research has been the advice in the field, is a special research expenses of the judge.

Prof. Shimadzu has played a role of a judge at the 3rd and 4th contests. After that, he has also served as evaluators of the first year of "Review Project". He proposed the evaluation point as "First scientific research, second something different with professional research". He classified research on the environment in three categories "Science of academicism" "Science of service", "Citizen Science".

"Science of service" and "Citizen Science" are unique concepts. These were new categories invented by Prof. Shimazu. Citizen science is to know the mechanism of the environment in a study carried out by the citizens themselves. This means the effect and achievement is not only how-to of solving the problem but also to discover the problem in his activity by himself.

In this way, Prof. Shimadzu has emphasized the importance of citizens to study with a sense of ownership about their personal belongings of environment. To carry out life-sized environmental research by citizens mean a change of research system from expert only to co collaboration research between citizens and expert. In conclusion, "SMLES" means not only the seamless of disciplines in earth science but also the seamless of participant of scientific research.

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