The best practices of royal project model on reducing hot spots and pm 2.5 in northern Thailand

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Abstract

Thailand Royal Project's record clearly demonstrates that it was able to change the highland communities from destitute and narcotic crops-dependent to narcotic crops-free, self-reliant ones, even contributing to the countries overall security and sustainability. As the successful of Royal Project Foundation development model (RPF model) with adapted to be used for the development of other highland areas for increase income and reduce smog from conventional agriculture. Smog and PM 2.5 are main problems of northern Thailand, caused from burning residue in agricultural areas. The objectives were study the implementation of the best practices of the Royal Project model to reduce smog or hot-spot area and determined key factor of farmer change from conventional to best practices agricultural systems, Data were collected 95 % (66 samples) duration between 2020 to 2023 at Pang Dang Nai village, Chiang Dao district, Chiang Mai, Thailand. The study were collected at Pang Dang Nai village (Pa Laung minority group), 307 population and 64 household, with altitude between 600–700 m (MSL). The conventional agricultures are field crops consist of maize, rice bean and cowpea. There were operated land preparation by burning crop residue. The study found that four types of agricultural systems while, field crop – fruit tree – green house – livestock systems show highest income by 24,612 \$/ha/year and less income in monoculture by 12,718 \$/ha/year. The hot –spot in the decreased by 91.3 in 2022 comparing to 2020. The key factors of changing were, 1) the promoting of the new agricultural system from official staff such as supporting production factors, providing training program, and promoting new management knowledge 2) Quantity and quality of products. The results concludes that the RPF model can be extended and further developed in other areas, which will lead to sustainable development under the preservation of natural resources and the environment, as well as solving the problem of smog in the area for sustainable agriculture on highland.

Keywords: Agricultural system, and smog, best practices in the Royal Project, highland

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