

XI.B.2. Sustainability of Rice-Wheat Based Cropping System in the Indo-Gangetic Plain : Role of Legumes

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Rice and wheat based cropping system has contributed immensely in enhancing the foodgrain production and achieving the food self-sufficiency in many south Asian countries. Despite several production constraints, and major environmental eventualities (like floods and famines), this production system could sustain the food grain supply and meet the domestic demand to a large extent in the last three decades. Rice-wheat production system, which covers about 12 m ha in south Asia alone is now showing the signs of fatigue in terms of stagnating or declining yields, and total factor productivity of rice and wheat. The system is also witnessing problems related to environmental degradation, like soil salinity, waterlogging, water table, increasing infestation of weeds, and changing scenario of diseases and insect pest dynamics have become prominent and threatening to the food security. It has been recognized that diversification of rice and wheat based system by inclusion of legumes is expected to revert the process of degradation. There are inherent abiotic, biotic and socio-economic constraints in the production of legumes per-se and specially in the rice-wheat based cropping system. There is an urgent need to devise and implement innovative technologies coupled with policy initiative to improve the adoption of legumes in the rice-wheat system to enhance the sustainability of the most fertile and productive cropping system of IGP of south Asia.