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Restoration Pathways for Degraded Land in West African Sahel and Dry Savannah: A Review

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Abstract

Developing countries, especially dryland areas in sub-Saharan Africa, depend strongly on ecosystem services generated by natural resources. Today, the rapidly growing population and the competing demands for food, feed, fuel, fibre are leading to degradation of forests and agricultural land. Globally, it is estimated that 10 – 20 % of drylands are already degraded and about 12 million ha are degraded each year. Thus, livelihood is vulnerable in many rural areas and likely to sharpen due to anticipated climate change. Land restoration is therefore an urgent priority if future food security and ecosystem's resilience are to be achieved. Several local, regional and global initiatives have been launched – with more or less success – to combat land degradation. Past efforts have generated some lessons that can be used to guide future initiatives. We conducted a comprehensive review of the existing literature to collate information on the current state-of-knowledge about degraded drylands rehabilitation, identify the ingredients of success and flesh out opportunities for scaling. It was found that restoration pathways ranged from passive (prevention of disturbance agents to enhance vegetation recovery) to active measures (e.g. site-specific biological and physical intervention for soil and water conservation, enrichment planting, sand dune fixation, farmers' managed natural regeneration (FMNR), agroforestry, direct seeding of grass, controlled grazing and prescribed fire). The diversity of land restoration initiatives is an indication of the dynamism of farmers, development agencies and researchers to curb land degradation. Success of restoration can generally be attributed to a combination direct and indirect incentives which have led farmers to adopt, and continue to use the rehabilitation practices. Farmers use different options or their combination depending on agroecological and socio-economic conditions. The cost effectiveness of these options still need to be evaluated to build evidence on what works, for whom, how, and at what cost across heterogeneous contexts.

Keywords: Climate change, desertification, ecosystem management, land degradation, socio-ecological systems, West Africa

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