VGT Contributions to Natural Resources Conservation in Venezuela and Latin America

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Abstract

Vetiver grass technology VGT, is a proven alternative for soil and water conservation, infrastructure stabilization and protection through bioengineering, disaster mitigation, environmental protection and rehabilitation, furthermore, VGT supports and delivers a wide variety of products and services that makes it a focus of interest for its application in Latin America and other regions of the world different from its place of origin.

In Latin America, from an historical point of view, the VGT can be considered through four steps or phases. In the first one, the advantages of the VGT are recognized and it is introduced at local level, but there is a lack of appropriate exchange and diffusion mechanisms. The second phase arises with the creation of the Vetiver Network and the Latin America Vetiver Network, which initiated the systematization and diffusion of the VGT with a centralized approach. The third phase introduces a new decentralized structure and the creation of national and subregional networks with local development initiatives, either from the public or private sector, derived from the stimulus generated in the second phase. Some of them show an important social character with emphasis on community development. The initiation of a fourth phase is envisaged as a product of the ICV-4 carried out within the region, which can be considered a unique and invaluable opportunity to make a big quantitative increment (massive application of VGT within the region) as well as a qualitative increment (exchange and enrichment of experiences within and outside the region) with a social orientation that ensures a real sustainable approach.

Research carried out within the region, has validated and adapted the recommendations found in the literature at global level with regard to VGT. Given the wide variety of natural and social conditions in this huge region, a sustained application of research-development programs is required that adapts and innovates the basic principles of the VGT at local level. Universities and other research centers roles have been fundamental in developing research-development activities in Latin America.

VGT applications within the region cover almost all the possibilities of the vetiver plant uses. Nevertheless, bioengineering and environmental applications are the most extended because of the commercial and business opportunities that they offer. There is a need to effectively apply VGT in a massive way for soil and water conservation-SWC where outstanding results can be achieved to promote a sustainable agriculture, associated with social community development stimulus of impoverished rural zones. Despite the positive spread of VGT in Latin America, and the local projects success working with community development, this is a challenge we have yet to face. Combination of VGT

with other proven SWC technologies and other natural resources conservation, as well as appropriate approaches with regard to local conditions, can be the key to consolidate a sustainable agricultural development. The Vetiver Project of "*Fundación Empresas Polar*" is a good example oriented by these principles.

Finally, the role played by the networks will be emphasized at global, regional and national levels in the promotion and diffusion of VGT in Venezuela and Latin America. Thanks to those networks, many users have been allowed to receive information timely and appropriate to apply VGT to solve multiple problems of environmental, economical and social nature. They have also promoted contact and the exchange of experiences among them, strengthening their own experiences and enriching and motivating the adoption, adaptation and innovation of VGT from other continents, mainly from Asia towards Latin America. New approaches and applications have been generated, being the Latin America region a new source of development for the VGT at global level. A sustained and continued activity of these networks is required for the expansion and massification of VGT use within the region; this will bring environmental, economical and social benefits and will contribute to consolidate the so called sustainable development. The four international conferences ICVs carried out, have allowed the systematization and preservation of experiences developed at global level, from which the researchers and users in Latin America have been taking advantage, being ICV-4 an extraordinary and invaluable opportunity for the region as it has been carried out within it.

Key words: Vetiver Grass Technology-VGT, networks, sustainable development, research-development