

Vetiver Research, Development and Applications in Thailand*

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Abstract

Vetiver R&D works recently conducted in Thailand have been briefly described, viz. improvement of forest ecosystem, carbon sequestration, stabilization of highway slopes, characterization of native vetiver ecotypes, selection of native vetiver ecotypes for forest area, and phytoremediation by various methods. In addition, vetiver applications have also been described, viz. rehabilitation of deteriorated environment, soil conservation in sloping agricultural areas, contests on vetiver planting, vetiver-planting promotion, and vetiver handicraft design, setup of vetiver's fanatics networks, establishment of vetiver banks, and architectural utilization of vetiver board.

Keywords: Forest ecosystem, carbon sequestration, characterization, phytoremediation, soil stabilization, vetiver contests, vetiver's fanatics networks, vetiver banks.

1. Introduction

Vetiver has been used for soil and water conservation as well as many agricultural and non-agricultural applications in Thailand for almost 20 years after its merit has been realized through the initiation of His Majesty the King. The present paper describes the R&D works on vetiver as well as its application recently accomplished in Thailand.

2. Research and Development

His Majesty the King was the one who suggested that vetiver could well be the answer to stabilizing Thailand's fast eroding lands while reducing excess runoff and related problems. In his several messages concerning vetiver, he asked the officers who had an audience with him to start doing research and development on vetiver. An attempt to compile

all the R&D works during the past few years has met with difficulty in that there are so many agencies in Thailand which conducted R&D but did not publicize their works. Thus only a fraction of the works have been accumulated and presented below.

2.1 Improvement of Forest Ecosystem

The study on the role of vetiver on improving the forest ecosystem of dry dipterocarp and mixed deciduous forests revealed that within just two years (2007-09), vetiver planted in contour of 2m vertical interval has considerably improved the moisture content of surface soil which helps in reducing the risk of forest fire. Soil structure of the dry dipterocarp forest slowly developed, with a total density of 1.28-1.97 megagram/m³, while that of mixed deciduous forest was 0.92-1.39 megagram/m³. The amount of organic matter of the dry dipterocarp forest was quite low, at 17.0-18.2 g/kg of soil while that of mixed deciduous forest was at 11.2-37.1 g/kg of soil. No significant difference was found in plant population as well as in meteorological development. However, meteorological characters were found to have positive

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