TRIBUTE TO HIS MAJESTY KING BHUMIBOL ADULYADEJ THE GREAT

The Philosophy of Sufficiency Economy

By

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Your Royal Highness, Ladies and Gentlemen ….

"To be a tiger is not important. The important thing for us is to have a self-supporting economy. A self-supporting economy means to have enough to survive… each village or each district must have relative self-sufficiency."

His Majesty King Bhumibol Adulyadej The Great

It is an honor, on behalf of the Global Vetiver Community, to pay tribute to the role and contribution that His Majesty King Bhumibol Adulyadej The Great made to the development of the Vetiver Grass Technology. A technology that has impacted tens of thousands of small, and often poor, farmers in many parts of the tropical and semi-arid regions of the world.

The King's theory of "The Philosophy of Sufficiency Economy" places sustainability at its core, in contrast to the more popular, business driven, short-term for-profit model that has been dominating world agriculture since the 1950s.

The Philosophy of Sufficiency Economy promotes the idea of conserving scarce resources and optimizing production without harming the environment. Today the challenge of climate change and fast declining soil health demands that we move towards "The Philosophy of Sufficiency Economy" that when related to farming is synonymous with "Regenerative Agriculture".

At the time of his Coronation the King pledged to "*reign with righteousness for the benefit and happiness of the Thai people*". He did his best to do this during his long reign. As an engineer by training, he was a "projects" King, and one of those projects dear to him was the research and development of vetiver grass as a basic tool that would enable "The Philosophy of Sufficiency Economy" at community level.

The research, development, and introduction of Vetiver Grass Technology (VGT) to the Thai people was for His Majesty a family affair. I remember on one occasion that I met him he told me

that … "*Vetiver had changed the life of The Princess Mother's (his mother)*" … through her hands on and close involvement in the vetiver project at Doi Tung.

His daughter, TVNI's Patron, Her Royal Highness Princess Maha Chakri Sirindhorn, made sure that the work on vetiver grass was focused on His Majesty's sustainable and economic objectives. Her Royal Highness has, I recall, attended every International Vetiver Conference, since the first was held in Thailand in 1996, and has provided critical support via the Chaipattana Foundation for those conferences.

Scientists at The Princess Sirindhorn International Center for Research Development and Technology Transfer at Kasetsart University. Scientists have played a significant and important role in vetiver research.

His Majesty established the King of Thailand Vetiver Awards for research and development. These six awards made at the time of each International Vetiver Conference are much sought after, providing incentives for quality research and development.

"Vetiver development" is just one of many programs that the Chaipattana Foundation and the Office of the Royal Development Projects Board support. For those of us outside of Thailand it has and continues to be a very important one. Vetiver R&D delivered by the program has been of great use and benefit to many small and poor rural people in Asia, Africa, and Latin America.

His Majesty's initiative and leadership demonstrated the importance of high-level involvement and for long term institutional support – especially support for research, plant propagation and technology transfer.

The Land Development Department has played a critical role in vetiver plant production and technology transfer. The Petroleum Authority of Thailand PTT, through its social programs, has supported vetiver-based community development including support for the vetiver handicraft industry.

His Majesty took the long view, and he was right to do so. Changing cultural and land management practices is at its best a slow process.

In the late 1980s, John Greenfield, with my support, introduced Vetiver grass hedgerows to farms on some World Bank watershed projects in India. At that time our focus was on soil and water conservation – the hedgerows being just so much more effective and cheaper than costly and difficult to maintain engineered structures.

Project supported research confirmed the high level of erosion control (up to 90%) and soil moisture conservation (up to 70% reduction in rainfall runoff) attributable to those hedgerows. Farmers using vetiver were better drought proofed and protected against extreme weather events (both wet and dry). In fact, vetiver provides excellent insurance against potential crop

losses. As such the many organizations supporting farmers should give serious consideration to including Vetiver Grass Technology as part of their support.

Since the start of His Majesty's initiative 35 years ago many more vetiver applications have been developed. The late Diti Hengchaovanich (Thailand), together with Dr. P.K.Yoon (Malaysia, and first recipient of the King of Thailand Vetiver Award) pioneered the use of vetiver for stabilizing shallow soils on steep highway slopes. This was followed by Dr. Paul Truong's (Australia) research on the phytoremedial action of vetiver for treatment of contaminated soil and water. Their work resulted in a significant expansion in global vetiver relating to the application and science of what is now known as the "Vetiver System".

"Climate Change" induced extreme weather events and increasing decline in soil health, due to poor cropping practices and overuse of agricultural chemicals, has led to some very difficult and bad situations for many farmers that have to be corrected.

Why is Vetiver Grass Technology an important component of the "Philosophy of Sufficiency Economy"?

…… When planting a vetiver hedgerow, we get a lot more than just controlling erosion_…… Hedgerows retain soil and increases Soil Organic Carbon, the latter is essential for soil health and plant growth. The improved soil moisture and huge amounts of organic matter present in vetiver's leaf and root biomass provides large amounts of soil organic matter for soil micro fauna and flora to flourish, delivering the nutrients and moisture needed for crop growth.

These same hedgerows and microbes capture, and, in some cases, break down toxic residues from agricultural chemicals. Those hedges help assure biodiversity by providing habitat for a wide range of wildlife including beneficial predator insects that can help control crop pests. The hedge functions as a dead-end trap plant for stem borers of rice and maize, reducing the need for pesticides. One of the winners of this year's King of Thailand Vetiver Awards, Dr. Huang Lu of China, will describe the very important work that his team has done in this area of eco-engineering.

…. Vietnamese farmers are following some Thai practices of interplanting vetiver into their vegetable and perennial crops to: improve moisture, increase soil organic matter, reduce soil temperatures and weeding by "chop and drop" mulching, and most importantly to reduce the use of fertilizer and the costs that go with it.

….. In India and Kenya vetiver provides an essential component for the development of food forests. Coffee farmers in Ethiopia and Colombia are incorporating vetiver into their coffee management practices. They are also using vetiver to create wetlands for treating effluent from coffee pulping "factories" – resulting in cleaner river water.

…. Vetiver provides protection for farm assets such as farm ponds, building sites and homes, farm roads and pathways, drains, irrigation channels, stream banks, spring heads, and treatment of on farm point source pollution (effluent from piggeries).

…. Farm hedgerows improve ground water recharge, slowdown storm water discharge, and reduce farm sediment discharge --- all to the benefit of downstream/basin populations.

… Off farm community applications of vetiver enable at low cost (1) the protection and stabilization of infrastructure and landslips (often the source of major sediment flows); and (2) the treatment of polluted wastewater to improve water quality and human health. Demonstrated at this conference by three King of Thailand Vetiver Award winners – Feng Ziyuan (China) - micro treatment of village sewage systems, Eric Weidiger (USA) - treatment of landfill leachate, and Edwin Oyaro (Kenya) - Green Latrine.

….. Vetiver biproducts are being increasingly used as thatch, forage, source stock for handicrafts, as well as for the more traditional medicinal and perfumery uses.

….. Every vetiver slip that is planted is superior to most other plants in the capture of atmospheric carbon dioxide and converting it into Soil Organic Carbon – stored deep in the soil profile.

One of the King's objectives was to make sure that vetiver knowledge developed in Thailand would be shared widely in Thailand and in neighboring countries.

The Chaipattana Foundation, under the leadership of Secretary General, Dr. Sumet Tantivejkul, has sponsored seven international Vetiver conferences, that together with country and regional conferences and workshops have been important instruments in the knowledge sharing process …… and yet …. when one takes a broader look (using quality satellite imagery) one sees vast farming areas that remain unprotected, where landowners are either unreceptive or lack the knowledge.

The late Criss Juliard, an experienced and respected development manager, presented a paper at ICV2 (2000) about a program in Madagascar – quote.

.. *"<u>If vetiver grass technology is so simple, inexpensive and good for the health of the soil, why isn't it promoted more broadly on a national scale in the same way vaccinations are promoted to preserve an individual's health?</u>*

The answer is not related to the attractiveness of the technology, but to the challenge of dissemination …… including people and organizations committed to vetiver, reliable and timely supply of vetiver plants, and applying vetiver technology according to site-specific needs.

The approach needs to be low cost, with information campaigns, demonstration sites, and use of research and applications developed in other countries.

Success can be attributed in part to close relationships with the four target groups in the vetiver communications and implementation plan: (a) village associations, (b) private producers, (c) local elected officials, and (d) professional organizations, ministries and donor" … End quote.

We need to act now to accelerate knowledge transfer and provide incentives to induce potential users to apply vetiver grass technology.

I believe that we must make much greater use of the private sector. Compared to 30 years ago there are many vetiver users who have built up VGT skills that could be used to assist others.

We should find a way of using them. Some of these experienced people could develop private *vetiver service businesses* to service the farming community. Such services might include: planning and surveying the placement of vetiver hedgerows; using their own farms as demonstration sites for others; managing simple training workshops; provision of initial plant material; occasional follow up to assure quality applications; and providing guidance to local user networks injecting new ideas and shared experiences. None of this is rocket science – it is practice orientated carried out by practical people in the community. Some of this is currently being done with success.

To support such private initiatives, governments should consider policies that would move from passive (talk) support to active support.

Such support could include cash (grants) incentives to farmers to plant and maintain vetiver hedgerow layouts providing adequate soil and water conservation (skeletal) requirements. Support should be given to selected existing farmers to develop Vetiver Service Businesses (VSB).

This support might include funding to guarantee the sale of nursery propagated vetiver for say three years, and the initial first year hiring of one or two vetiver field technicians (Visiting Agents - VAs) to train and interact with the farmers. Area of influence of a VSB might initially be confined to sub-watersheds that are sized to fit the walking/cycling distances of the VA (3-5km radius).

The case for such approach is that (1) its locally orientated and operated, (2) its low cost and service focused, (3) it benefits the farmer, the VSB, and the down watershed communities, and (4) it could be the fastest way of meeting the Climate Change challenge at community level.

I am sure that if King Bhumibol was with us here today, he would certainly support, and probably demand new efforts to accelerate the improvement of soil health and improving the wellbeing of the land and its people. He would I am sure be asking us all to find additional and more effective methods to accomplish this need. He like all of us knew that vetiver grass technology is not the silver bullet, but that it is indeed a unique multipurpose plant-based tool that can be used along with other technologies to achieve today's objective of restoring health to our land and soils.

His Majesty's Philosophy of Sufficiency Economy for every village/community is definitely strengthened through the use of the Vetiver System.

Finally, I am sorry not to be with you at this conference and wish you all an interesting and opportunity-filled few days.

Thank you.

Dick Grimshaw -- May 2023