सत्यमेव जयते

Government of Meghalaya

A Journey towards better Horizons

Soil & Water Conservation Department

2019

Message.

SHRI SNIAWBHALANG DHAR,
MINISTER
Transport, Commerce & Industries,
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Meghalaya, Shillong.

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MESSAGE

I am happy to learn that the Soil & Water Conservation Department is bringing out a special publication entitled "A Journey towards better Horizons" depicting scores of instances of successful implementation of its schemes and projects. These stories reflect the tremendous contribution made by the Department in the task of management of the State's natural resources as well as improving the livelihood of our farmers.

I therefore take this opportunity to applaud the good works done by the Department and I exhort its officers and staff to carry out their duties with vigour, enthusiasm and judiciousness so that we can be worthy of the expectation of the people of the State in which we are duty bound to serve.

(Sniawbhalang Dhar)
Minister
Soil & Water Conservation
Meghalaya, Shillong

Message.

It gives me immense pleasure to know that there have been positive changes brought about by the schemes and projects of the Soil & Water Conservation Department as this publication 'A Journey towards better horizons' would testify.

Today, socio-economic life and livelihood system of the people are inextricably linked with natural resources conservation and management. A glance at some of the stories in this publication confirms this fact. Wherever natural resources are conscientiously exploited, the possibility of sustainability increased. This is mutually beneficial both to man and the environment.

I congratulate the Department for documenting some of the success stories which are testimonies to the great strides made by the Department in natural resources management and in the uplifting of the livelihood of the rural community in particular.

(Shri. M.R. Synrem)
Commissioner & Secretaryto the Govt. of Meghalaya,
Soil & Water Conservation Department

Preface.

It is heartening to see that the implementation of the schemes and projects of the Department are positively impacting upon the State's natural resources and on the livelihood of those that depends upon these natural resources.

The Department had through the years adopted people friendly approaches to the implementation of its projects. These seem to have paid dividends. People and community are now active participants in the implementation of the Departmental projects. As a result, there is an increasing awareness of the importance of conservation and management of natural resources by the rural community. People, particularly, local traditional bodies and farmers have responded with great enthusiasm to concepts and ideas introduced by the Department. This in turn is conducive to socio-economic betterment linked to positive and judicious natural resources usages.

In this publication, though only a few success stories were selected, they however reflected the tremendous impact made all over the State wherever the projects of the Department are implemented. The purpose of this publication therefore, is to showcase such stories as a way of educating and encouraging all concerned that livelihood could go hand-in-hand with management of natural resources.

In this regard, I extend my thankfulness to the Editorial Board of the Department for meticulously preparing this publication and the officers and staff who provided the necessary inputs that made this issue of 'A Journey towards better horizons' possible. I particularly would like to express my gratitude to the Hon'ble Minister incharge, Soil & Water Conservation, Shri Sngiawbhalang Dhar and the Commissioner & Secretary i/c Soil & Water Conservation Department Shri. M.R. Synrem IAS .

(Smti. V. Papang)
Director of Soil & Water Conservation
Meghalaya, Shillong

Acknowledgement

Soil & Water Conservation Department

Meghalaya

The Editorial Team would like to express its gratitude to Honourable Minister of Soil & Water Conservation Department, Shri.Sniawbhalang Dhar for his support in bringing out this magazine "A Journey towards better Horizon" Special thanks to Shri. M. R. Synrem, IAS, Commissioner & Secretary, Soil & Water Conservation Department, Smti V.Papang, Director and Smti. S.Ch Sangma, Additional Director, for their valuable guidance and inputs towards finalising the magazine.

Secondly, we would like to show our appreciation to all the Joint Directors, Divisional Officers, Senior Assistant Soil & Water Conservation Officers, Assistant Soil & Water Conservation Officers, Range Officers, Registrar and the Staff of the Department for contributing towards gathering information, collection of data in completing the project.

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Special Thanks to

Shri. K. K. Kharlukhi

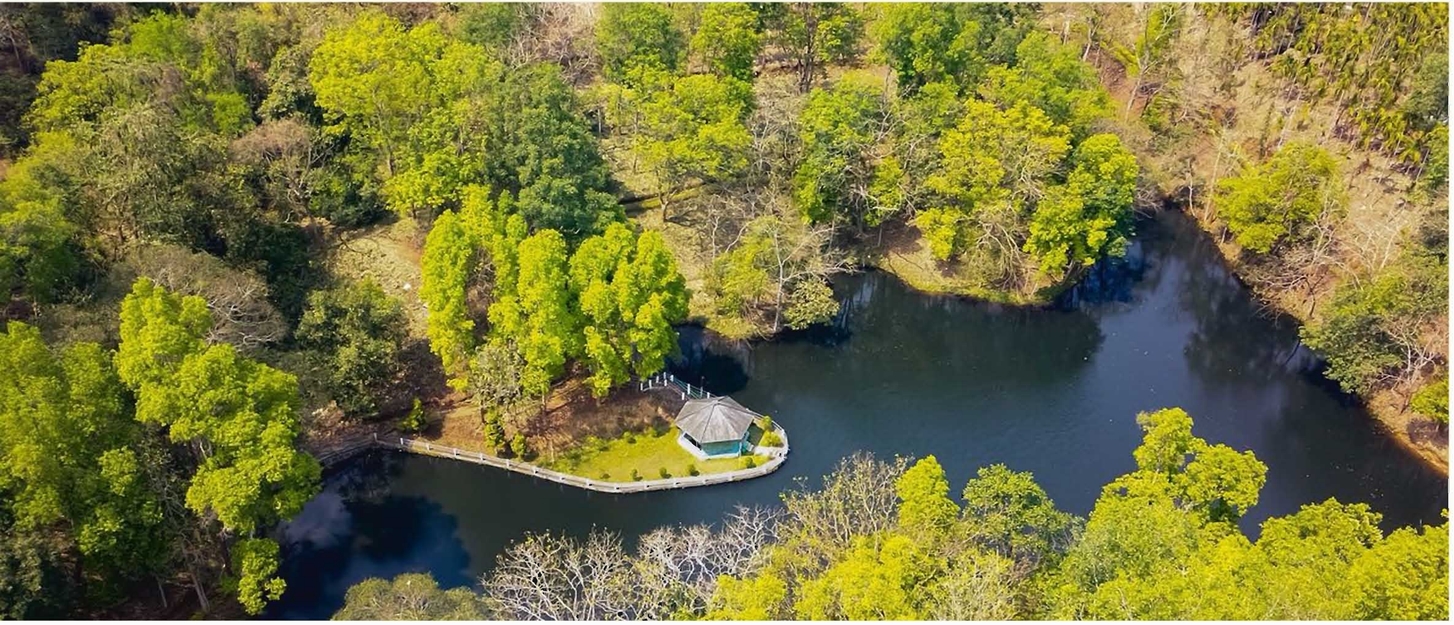
Gem Of A Lake

West Garo Hills

On NH-51, 50 km. from Tura lays a watery spectacle that was as aesthetic as it was mesmerizing. This is Dachi Lake in Anogre, West Garo Hills District. The sparkling waters of the lake beckon travellers, passersby and people from all around to bask in its beauty. The lake was a brainchild of the West Garo Hills Soil Conservation (T) Division which through the Departmental Scheme Rashtriya Sam Vikas Yojana Scheme (RSVY) renovated it in 2009-10 at a cost of Rs. 37 lakhs.

Before implementation of the project, the Dachi Lake was a dying water body, with heavy siltation and clogged by vegetation. People here had no access to drinking water and had to use the murky waters of the lake for their daily needs. All this changed after the renovation of the lake.

Gem Of A Lake



Today, Dachi Lake sported not only a new look but also have facilities for recreation, boating, fishery development and its excess water can be used for bathing, washing and irrigation purpose in the nearby fields not to speak of augmenting groundwater recharging capability. It boasted of a boathouse, recreational shed, silt retention dam, cobbled stone pathways, seat outs, mini-aquarium, boulder sausage protection wall and a spring chamber. It has six boats and provides boating facilities for visitors. Besides, 21 nos. of solar streetlights were installed to illuminate the area at night. What is more remarkable is that a steady stream of visitors had facilitate income generation on a daily basis from entry fees, boating fees, fishing fees and the cafeteria for the society entrusted with running and maintenance of the lake. Some other small commercial units are operating in the periphery of the Lake while the villagers could harvest the fishes from the lake on an annual basis.

The added bonuses from the lake have a positive impact on its immediate vicinity and the environment.Moreover, people have come to realize the importance and need of maintaining the natural assets for their livelihood and commercial pursuits.

The Joint Management Committee, Anogre, West Garo Hills, was awarded the National Ground Water Augmentation Award 2010 under the category of NGO/ Gram Panchayat/urban local bodies for improvement practices for ground water augmentation through RainwaterHarvesting and Artificial Recharge to ground water by Govt. of India. Shri Pawan Kumar Bansal, Honorable Union Minister of Water Resources presented the award at VighyanBhawan, New Delhi on 12th April'2012 in the presence of Shri. Vincent Pala, Honorable Minister of State (Water Resources) and the other dignitaries. Smt. Lucky Sangma, the President of Joint Management Committee received the award on behalf of the Committee. They were awarded a cash prize of Rs. 1,00,000/- (Rupees One lakh) a citation and a certificate.

With a bit of foresight, vision, meticulous planning, enthusiasm and a large dose of industriousness, the Dachi Lake could become one of the tourism hotspots of the District leaving in its wake environmental and commercial boon to the community. It may also serve as a motivational model for other communities to follow suit wherever bounty of nature are tapped to its fullest potentiality.

Building Bridges

West Jaintia Hills

Gone were the days when people of the five villages straddling both sides of the Umboo stream have to make long detour or wade through the stream to get to the other side. The absence of a road link over the stream is a great impediment not only for travelling but of transporting of goods back and forth. This is a great setback for any attempt to accelerate economic growth.

It is on such a scenario that the Integrated Watershed Management Programme was set for implementation at the two micro-watersheds of Lower Umboo and Upper Umboo. These two micro-watersheds which cover a total project area of 2000 hectare comprise of five villages, viz., Sahsniang 'A, Sahsniang 'B', Mooshrot, Tum Tum and Thangthring. Under the Entry Point Activity component of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)Watershed Development Component (WDC) (erstwhile Integrated Watershed Management Programme), a proposal for construction of a suspension bridge comes up.

Accordingly, the suspension bridge was constructed in convergence, the three partners being the West Jaintia Hills Soil & Water Conservation Division, the Meghalaya Rural Development Society and the local communities who contributed Rs. 13.5 lakhs, Rs. 1.5 lakhs and Rs. 2.5 lakhs respectively. The bridge was inaugurated by the then Hon'ble Deputy Chief Minister, Shri Rowel Lyngdoh on 2nd July, 2014.
The suspension bridge has eased the communication problem of the villagers and increased accessibility to both sides of the river Umboo. It has also greatly helped in flow of communication, transportation of goods and produces of the area, particularly for taking crops to market besides uninterrupted supply of agricultural and domestic goods and commodities to people of the villages on either side of the Umboo River.

Flavour Of Life

West Garo Hills

For Tenon T. Sangma of Gongdenggre village in West Garo Hills district, life revolved around the same tedious cycle of making-do. He would have been just one ordinary farmers going with the flow and stuck in an endless battle to keep his livelihood afloat. Tenon T. Sangma perhaps had no inkling of what was in store for him when the Tura Soil & Water Conservation (T) Division implemented the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)Watershed Development Component (WDC) (erstwhile Integrated Watershed Management Programme) (Batch-II) at Chinamgja micro-watershed in 2012.

As part of a component of the project 'development work under non-arable land treatment' of the project, the Division distributed 100 cardamom saplings to Tenon T. Sangma. Knowing that the cardamom (Ilaichi or Elaichi in India) is a popular aromatic spice and quite costly in the market, Tenon T. Sangma decided to try his hand in planting this 'Queen of Spice.' He first started with the 100 saplings in just 0.25 hectare of land. By the third year of plantation he had been able to harvest 51 kilogram of dried mature cardamom fruit known as capsule. These capsules fetch a price of Rs. 1200/- per kilogram at Rongram market. This gives him the inspiration and impetus to increase his cultivation plot to 0.8 hectare.

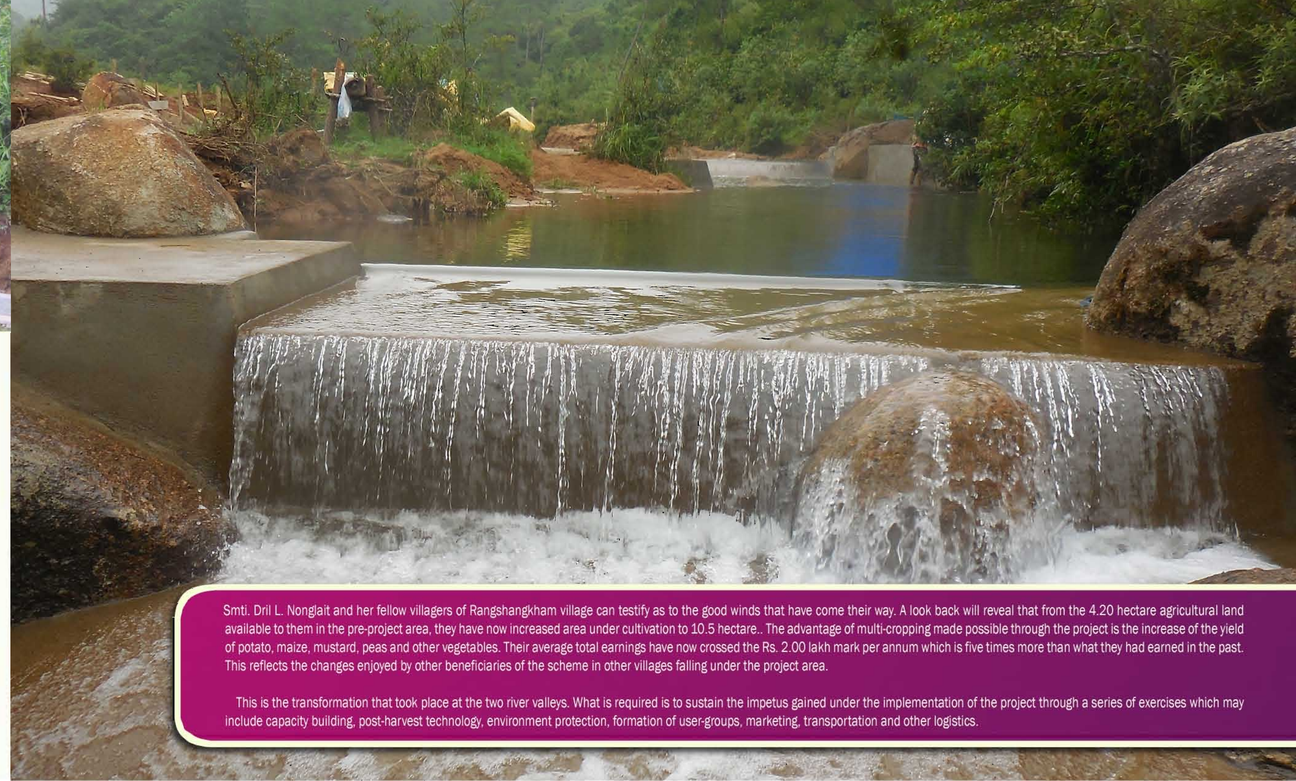
Tenon T. Sangma had been able to make a jumpstart in terms of income generation. Cardamom has brought flavour to his life and improves the living condition of his family. His success inspires other farmers in the nearby villages to develop interest in cardamom plantation. It would not be long before others took his cue and start cardamom plantation as the geo-climatic condition of this watershed is highly suitable for the cardamom plant and the department was able to provide saplings to other farmers through the consolidation fund of the project.

East Khasi Hills

When Good Winds Blow

For years unaccounted, farmers at the Nongwah, Wahumlawbah and Rangshangkham river valleys sweated and scrounged to make their crops grow with almost primordial (primitive) agricultural practices. They have no tangible irrigation system and mostly used temporary structures, particularly of mud and bamboo to accumulate water for their fields and they drew furrows on the land to serve as conduits for the much needed water for their crops. These, of course, do not last. Come the next big downpour and all their efforts were washed away in a matter of one day. The fallout of this unsavoury situation is that they cannot extend their agricultural plot and they can practice only mono-cropping, mostly paddy. Hence, potentiality for increasing the yield of their crop is effectively stopped.

With the implementation of the Rangshangkham River Valley Projects (RVP), Rural Infrastructure Development Fund (RIDF) XX, their rickety dam was replaced by RCC dam and CC channel. Irrigation is assured throughout the year enabling the farmers to practice double cropping system, both paddy (kharif) and vegetables (rabi) like potato & peas.



Smti. Dril L. Nonglait and her fellow villagers of Rangshangkham village can testify as to the good winds that have come their way. A look back will reveal that from the 4.20 hectare agricultural land available to them in the pre-project area, they have now increased area under cultivation to 10.5 hectare.. The advantage of multi-cropping made possible through the project is the increase of the yield of potato, maize, mustard, peas and other vegetables. Their average total earnings have now crossed the Rs. 2.00 lakh mark per annum which is five times more than what they had earned in the past. This reflects the changes enjoyed by other beneficiaries of the scheme in other villages falling under the project area.

This is the transformation that took place at the two river valleys. What is required is to sustain the impetus gained under the implementation of the project through a series of exercises which may include capacity building, post-harvest technology, environment protection, formation of user-groups, marketing, transportation and other logistics.

Tapping Cascades

South West Garo Hills

In the South West Garo Hills district of the State of Meghalaya lays a smattering of settlements whose inhabitants work the land in a perpetual lack of irrigation water. They rely mostly on the mercy of the rain gods and if that fails or if the quirk of nature plays truant with them, their crops production falls short of requirement. This is a vicious cycle that they had to undergo year after year.

Fortunately, this situation is coming to an end. The implementation of the Muji Surface Minor Irrigation Programme (Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)Har Khet Ko Pani (HKKP) is bound to change the agricultural landscape in the area. The project which was started in 2013-14 covers a total project area of 574.74 hectare covering seven villages with a total number of expected beneficiaries of 267. The Project with a cost of Rs. 1149.48 lakhs, aims at significantly reducing dependence on rainfed cultivation; increase in potential cultivation area; reducing erosion problems; recharging groundwater status and as an added measure fishery development. Under the project, 10 numbers of irrigation dams, a water harvesting structure, weirs, RCC channels and embankments were constructed. These structures straddle the entire landscape as channels criss-crossed the land to provide irrigation water to the farmers' fields.

Changes are now beginning to be felt in the area. Farmers can now increase cultivation areas and practice multiple cropping which hitherto they were engaged on mono-cropping. Now, besides paddy they can plant additional crops like vegetables all the year round. Needless to say, the enhance productivity has fetched them handsome returns compared to what they have earned in the pre-project period. Moreover, the usual drudgery of having to repeatedly construct makeshift dams and water conduits were done away with as the structures built for them are more or less permanent in nature. In short, most of the pre-project impediments that they had experienced were removed or improved upon and this gives them the impetus to upscale their agricultural pursuits.

Perhaps the most significant impact of the implementation of the project is the growing consciousness amongst the people here in terms of community organization, environmental awareness and expansion of their economic activities. The impetus they have had through the implementation of the project prompted them to look out beyond the horizon and to look ahead. Now, they are more conscious of the need to regulate their activities and to value the assets created for them. This is a win-win situation both for the people and the natural resources around them. With a little more community organization, group dynamics, capacity building and judicious maintenance and management, sustainability is more or less assured for the community in these seven villages.

Decking Sylvan Raiments

A scene of desolation – treeless hills, skeletal remains of gravel and sand - greeted travellers as they neared Sohra (Cherrapunjee), the rainiest place on earth. Amidst this grotesque sight, a trickle of hope holds on precariously to remind one and all that the juice of life, water is all but gone from this place. Wah Shari is one of the few water sources holding its own on this natural devastation. Located just 2 km. off Sohra, the catchment area of this water sources is severely degraded and unprotected and we can very well imagine the dwindling availability of water at this source. This aridity is made more manifested during the dry seasons.

East Khasi Hills

The introduction and implementation of the Catchment Protection and Development of Water Sources at this place by the Shillong (T) Division of the Soil & Water Conservation Department is therefore a monumental effort worth mentioning. After taking the community into confidence, the task of mobilization and participation of the people was taken. Then on, a slew of measures were vigorously taken up under the project. These include the construction of 20 nos. silt retention dams; 3010 nos box terraces; 2 nos. protection walls. The area now dotted with more structures aiming at soil and moisture conservation in the form of water harvesting structures, sand filtering, storage tanks and even bathing and washing places. Afforestation of degraded catchment was taken up as well as fencing of the catchment to prevent encroachment.

A flurry of activities are now seen at the place and this in itself has created awareness amongst the people on the importance of catchment protection and future water security. Now, there is ensured water availability all year round for about 225 households which is no mean achievement giving the state of affairs pre-project. The village authority had even been able to sell excess water during the dry season and the fees collected are kept for maintenance and repair of the assets created. Overall, there is livelihood improvement through water based activities besides employment generation in the area.

It is an encouraging thought that in an area once predominating by despondency, the rays of hope begin to perpetuate in the community. Besides this, visible changes are appearing in the form of vegetative cover of the catchment area, reduction of erosion and soil loss, conservation and harvesting of water, water storage, improvement of water quality and easier access to clean drinking water.

To The Green Horizon

West Khasi Hills

If ever there was one farmer who takes integrated farming to a whole new level, it was Shri Spingwell K. Marshra of Mawduh village of West Khasi Hills District. No one would have thought that a nondescript farmer who thrives on subsistence agriculture would come up in the world like he did. But then, Shri Spingwell is no ordinary run-of-the-mill person. Where his vocation is concerned, he had always had it in him to reach out to new horizons. When he got whiff that strawberry is the new wonder crop that could manifest his dreams, he jumped at the opportunity.

Shri Spingwell made up his mind to try his hand at strawberry cultivation. He bought few planting materials, planted some in his garden and saw that it was thriving. In 2009, with loan from a bank, he started his first commercial cultivation of strawberry. In the following year, he was selected as a beneficiary of the Weinier Watershed (IWMP-5) in which one of its component is to assist in income generating activities of the farmers. Under this, he was provided Rs. 76,000/- for construction of a farm pond through which he could irrigate his crops, particularly strawberry plants. Later, he received further financial assistance from the watershed project where under crop demonstration component he could extend his cultivation. But Shri Spingwell is not complacent. With still further assistance, he tries his hand in vermicomposting from which he could fertilize his plots and also able to sell the vermicompost to local flower growers.

There seems to be no limit to the gritty farmer. In the year 2009 itself, he formed the Mawduh longii Co-operative Society Limited. This Co-operative Society had 40 members who are engaged in different agricultural activities and livestock farming. This is not all. When he observed that there was increasing fruit production in the watershed area, an idea came to him to take up post-harvesting as fruits are perishable crops and have poor shelf life. This prompted him to start a processing unit where he could enhance the value of perishable fruits by converting them into products such as jam, jelly, juices, squashes, pickles, etc. Besides the above, Shri Spingwell had adopted an integrated system of farming where he took up poultry farming, sericulture, apiculture and vegetables production. He also planted castor plants and started rearing Eri silkworm.

From all his endeavours, he could now garner income several times from what he had earned in the pre-project period. He had been a motivational force for others, particularly, members of the Co-operative Society of which he was a President, leader and mentor. Even on his own, he had been able to generate employment opportunities as many people are now engaged as his workers and paid helpers. It is remarkable that while in pursuits of all his activities, Shri Spingwell was recognized as a progressive farmers and he was invited to share his experience and interacted with experts and agencies of different allied fields. He was selected to represent the State of Meghalaya to a two-week long Farmers' Exhibition at Nagpur, Maharashtra and was awarded 3rd prize for showcasing strawberry and local honey at the national level.

Shri Spingwell's hard work and determination had been an inspiration to other people around him. From his experiences, exposures and trainings he was now sufficiently equipped to share, guide and inspire other farmers and entrepreneurs in both the South West and West Khasi Hills districts of the State.

Doing It With Vegetables

The one component of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) Watershed Development Component (WDC) (erstwhile Integrated Watershed Management Programme) that could catapult efforts of group and individual farmers to higher level of production is the 'Production and Micro Enterprise'. Under the implementation of the Umjani IWMP-IX at Phudmyrdong and Jani Mawiong, two units – one a group and the other an individual stands as testimonies to this phenomenon.

Buoyed by the need to pool their resources, 14 members of the Nangkiew Shaphrang Self-Help Group (SHG) of Phudmyrdong village took up cultivation of vegetables as well as paddy. From the total financial assistance of just over Rs. 2.00 lakhs from the 'Production and Micro-Enterprise' component of the IWMP, they were able to cultivate a variety of crops ranging from paddy, potato, maize, cauliflower, broccoli, cabbage, radish, turnip, peas and beans. During the year 2015-16 they were able to produce over 10 metric tonne of vegetables and in the process raking in an annual income of about Rs. 20.00 lakhs. This, in a rural setup where farmers are used to marginal production speaks volume of the success of the endeavour. They have been able to meet their objectives which include production and income generation over and above supplementing crop requirements of the nearby market at Mawngap and even the Shillong main market.

East Khasi Hills

Gone are the days of mono-cropping and single activity for this group. They are now rearing to up the ante and looking at upscaling their activities through partnership with concerned governmental agencies particularly in the field of capacity building, technical and scientific support and even market linkages and enhancement of financial investment.

Similarly, one successful beneficiary of the Umjani IWMP-IX is Smti Phrissilian Langstieh who had taken up exotic vegetables cultivation at her village in Jani Mawiong. The introduction of Kitchen Gardening especially Brocolli cultivation in her farm & also financial support for construction of a small Dug Out Pond finally motivates the farmer to take serious note of farming. Thus, in the process she availed a Greenhouse unit through the Department of Horticulture in the same land where she could produce seedlings of brocolli, cabbage, cauliflower and even pepper-bells (Capsicum) of green yellow and red colour varieties and plant them throughout the four seasons of the year.

This mode of convergence enhances her productivity to a much larger scale and increase in her income. She set herself to be a role model to other farmers and her willingness to share her knowledge and experience to her fellow farmers about the exotic vegetables cultivation could be reflected from the field visit and testimony of the farmers themselves. Smti Langstieh is now able to garner a total amount of Rs.80,000/- income from broccoli. Whereas, from Capsicum she gains a profit of Rs.35,000/- annually. This is a far cry from the situation she had endured in the past in the agricultural front.

A Tryst With Nature

West Garo Hills

The people of Dollongre village in West Garo Hills district get a first hand taste of the destructive effects of jhumming when one day they experienced drying up of three perennial streams from where they were drawing water for domestic consumption including irrigation for their paddy fields. All along they had been dependent on jhum cultivation which involves ravaging all vegetations. They now realized that the particular forested hillock which they grow crops through jhumming is actually the catchment area of the micro-watershed from which three streams (Dai stream, Danggra and Banang stream) originated.

A meeting was convened among themselves and a resolution was passed to keep a village reserve forest to regenerate natural vegetation in the hillock from which they draw water for their own domestic consumption. Starting from the year 1999 the villagers kept that reserve village forest which runs along National Highway-51 intact. They passed a resolution that whoever violates the rules and regulations and cuts any tree either for personal use or for sale will have to pay the fine of Rs. 500.00.

After ten years of maintenance on their own, starting from 2009-10, the Tura Soil and Water Conservation (T) Division extended help to the above-mentioned village reserve forest through the IntegratedWasteland Development Project (IWDP) under Atotpa Micro-Watershed Project for Afforestation Programme. Under the afforestation programme, the Department has introduced Gmelinaarboria, Neem, Michelia champaca, Rain tree, Silver Oak, Duabanga indica, Tuna celiata, etc in the area. After successfully conducting this afforestation programme, the forest had worked its natural course, replenishing the dwindling underground aquifers.

Now the PHE Department has constructed small dams to impound water to supply drinking water to four villages of Dollonggre, Chiok Songgitalgre, Dittigre and Chikasingre. One Water Harvesting Structure which has been constructed inside the afforestation area by the Tura Soil and Water Conservation (T) Division under this scheme is helping the villagers to store water for various productive uses.

It is through the IntegratedWasteland Development Project (IWDP) scheme that the Tura (T) Division of the Soil & Water Conservation Department provided assistance for afforestation in 20 hectare of land in this forest. Now, the people are aware of the folly of their ways and are more resolute than ever to keep the forest which is their source of water alive and well. The upside of this experience is that there is mutual benefits for both the environment and the people that depended on it for their livelihood and water needs.

Water of Life

South West Khasi Hills

For the villagers of Mawtongtin village in South West Khasi Hills District, meeting their daily domestic requirement of water, not to speak of irrigation water, is drudgery. What with the overall environmental degeneration – lack of tree cover, soil run-off, inadequate underground water et al.

The people doggedly strive to make-do with whatever natural resources they had at hand. It goes without saying that this situation had badly affected any chance for them to flourish in their economic pursuits particularly, agriculture.

The people here would have got stuck in a quagmire of helplessness had it not been for the intervention of the South West Khasi Hills Division of the Soil & Water Conservation Department, in the introduction of the Water Plus concept for multiple water uses in the form of Multipurpose Reservoir through Catchment protection, multi-cropping/crop rotation to improve productivity, domestic water provision, green energy provision, eco-tourism, etc. The construction of an irrigation Dam/Weir through Pradhan Mantri Krishi Sinchayee Yojana – (PMKSY)Har Khet Ko Pani (HKKP) (erstwhile Accelerated Irrigation Benefit Program) Project givesthe much needed boost to the concept as it serves to provideirrigation water to some parts of the village. Another relatively new and innovative technology introduced in the village is the hydroger. The hydroger is basically a water mill powered by an electrical input of just 3-4 kW.

Understanding the potential of the water plus concept, the community enthusiastically participated in the conceptualization of the model and had evince interest for its operation and maintenance with technical support and other logistics from the Department as well as exploration of necessary inputs from other governmental and non-governmental agencies. These convergence partners to the project include the South West Khasi Hills Soil & Water Conservation Division, the Basin Development Unit (BDU) of South West Khasi Hills Meghalaya Basin Development Authority (MBDA), Nagaland Empowerment of People through Energy Development" (NEPeD), Nagaland, Public Health Engineering (PHE) Department, Meghalaya Energy Corporation Limited (MeECL)and freelance Hydraulic Ram Pump (HRP) Consultants. The dynamics of participation, funding, upscaling, technical support, hand-holding exercises and of sustaining the model are already in progress.

The components of the scheme include the irrigation dam and channel, Hydraulic Ram Pump (HRP), Hydroger, Overhead tank and electricity distribution. Under the project five numbers of households in the village are getting irrigation facilities; 38 nos. households are now having easy access to drinking water while other five number households are using green energy through the hydroger. In addition, the village is now getting five numbers street-lights from the hydroger.

Now with the dam and hydroger in place, the water plus concept is beginning to take concrete and practical shape. Already it has mitigated the water stress situation in the village besides catchment protection and serving as a model for proliferation of the concept to other areas.

The village of Mawtongtin is now well underway to becoming a water stress-free area. In the process, the dual benefits of a resurging natural environment and the improvement of agriculture and agricultural-based economic pursuits can be reaped by the community here.

Raising The Bar

Ri-Bhoi District

Tall, slender and gently swaying to the hot breeze in the border with Assam are the arecanut trees, a predominant crop of the people of these areas. The betelnut or kwai chewing habit of the people of Meghalaya makes it a popular horticultural product that transcended economic and even cultural divides. The much preferred version of this crop is the fermented betelnut which tastes better and fetches better price.

After the conducting of Participatory Rural Appraisal (PRA) exercises in the Lower Umlathu watershed, Ri-Bhoi District, the concept of improving the existing traditional system of fermentation was mooted under the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)Watershed Development Component (WDC) (erstwhile Integrated Watershed Management Programme) Project-VI. Sustainability of the system is assured as there is a huge market for the crop and that there had been an introduction of huge new areas for planting and development of this crop. Under the project, cemented fermentation tanks complete with pipe system for supply of water and outlets were constructed. These structures are lasting and larger. A single tank can contain 20000 betelnuts. Most of such tanks were constructed close to the plantation area so as to facilitate easier and quick collection and transportation of the betelnuts for processing.

The immediate impact of this these structures are high economic returns for the farmers. The market value of processed nut is almost thrice the price difference between an unprocessed nut. Secondly, the raw betelnut peels are normally discarded but with the fermented betelnuts, the peels are converted to some by-products and add to the income of the farmer. However, though the community can take up fermentation on their own but for nut peel value addition they would need support in terms of training and capacity building.

The cost of construction of each tank is Rs. 75,000/- They were built in convergence with the Backward Region Grant Fund through fund support at a ratio of 50:50. At present, the status of all tanks is in good condition and they are being operated and maintained by User Groups formed under the project. The introduction of the improved fermentation tanks in the watershed have greatly helped in raising the bar qualitatively and quantitatively for the betelnut farmers of the area and in the process brought in a huge change in their economic wellbeing.

Quiet Flows The Stream

East Garo Hills

That perennial streams should become seasonal bodes no good and reflects the malaise in the natural environment of the area. This was what had happened in a village in East Garo Hills. Over the years, vast tracts of land around the village of Tongbolgre Songgitcham which fall under the catchment of Simsang River had been depleted of vegetation due to jhumming. Many tributaries of the Simsang River originate from this catchment but gradually, streams and springs began to dry out. Observing this dire phenomenon, the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)Watershed Development Component (WDC) (erstwhileIntegrated Watershed Management Prgramme) (Batch-I) was implemented in the Rongal Micro-watershed. This scheme which was funded by the Department of Land Resources, Ministry of Rural Development of the Government of India was started in 2009-10.

With the aim to arrest the runaway rate of natural degeneration through improvement of vegetative cover and enhancement of water conservation system in the village, a Community Water Reservoir was constructed across the Janggitdi stream with a total catchment area of 18.536 hectare contributing to the reservoir. The total impounded area is 3100 m^2. The reservoir has a total storage capacity of 4500 m^3. The dam was constructed during the year 2012-13.

While constructing this reservoir, the villagers were taken into confidence. Hence, they actively participated in the management of the reservoir. To ensure sustainable flow of water to the reservoir, the villagers have kept the critical catchment area under natural vegetation with proper regulations that prohibit any kind of biotic interference. The community was involved in desilting and other maintenance works. An eight member User Group was formed to ensure proper management of the reservoir.

The immediate impact of the reservoir is that it enhances ground water recharge capability besides facilitating better moisture regime for surrounding horticulture crops and fishery development. The indirect and long term effects in terms of regeneration of natural opulence of the catchment and the resultant economic benefits to be reaped by the villagers is bound to be quite substantial in comparison to what had been hitherto.

The Aqua Miracle

When it comes to addressing domestic adversity, it is mostly the woman of the house who had to face the brunt of hardship. Apart from numerous domestic activities, women had to trek long distances and spent long hours to fetch potable drinking water from springs, wells or streams. This is not a cakewalk in a setting where water is not abundantly available near at hand and where there is no tangible system for supply of drinking water.

And this is exactly what happened at Myrdon-Nongbah village in Ri-Bhoi District. Although water here is not a rare natural commodity, it simply was not tapped to its fullest potentiality. All this changed, when the Integrated Watershed Management Project was implemented in convergence with the Mahatma Gandhi National Rural Employment Generation Scheme at the Lower Umpih Micro-Watershed. After PRA exercise, the community elect for an RCC storage tank with the aim of conserving water and make it available for domestic purposes. Accordingly, the asset was constructed during 2010-2011 under the Entry Point Activities component of IWMP along with convergence with MGNREGA at a total project cost of Rs. 2,44,100/-.

The storage tank (reservoir) constructed at a strategic spot in the village was able to store huge volume of water which was made use of as drinking water and for other domestic purposes. The structure sported pipe outlets, a covered washing platform and even a cubicle for bathing. Now that water is readily and easily accessible, people in the village, particularly women are greatly benefitted. They can now maintain cleanliness and focus more on farming activities. For the 179 number of households in the village, this is a far cry from the days when fetching water is a tedious affair. Besides, the presence of water in this spot had greatly enhanced underground water status in the surrounding area. Moreover, through the construction of the reservoir and the resultant positive impact, a new outlook on conservation had begun to take hold of the rural community here.

Today the community here is all geared up to sustain this activity by evolving mechanism for maintenance of the reservoir. For a community who had long been under the yoke of water deficiency, this aqua miracle is something that they cannot afford to lose or let go again.

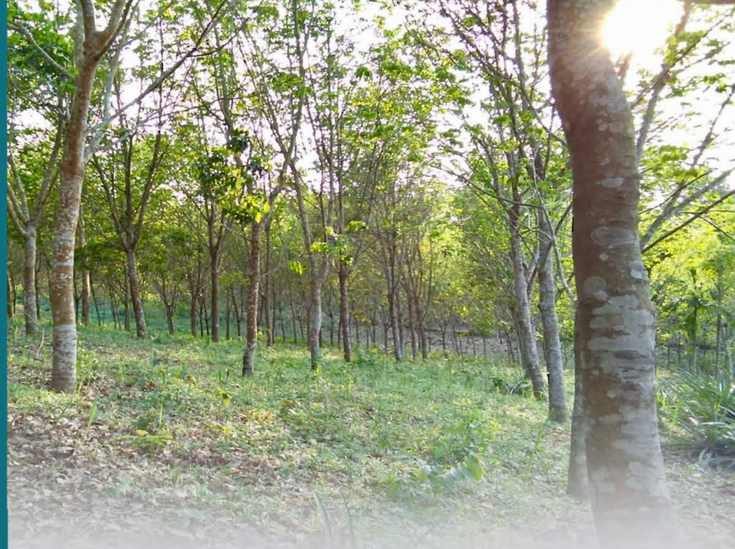
Ri-Bhoi District

The Rubber Saga

Predominant jhum cultivation, difficult terrain, inaccessibility and frequent cases of insurgency to boot are just the recipe for poverty and penury. Here is a story of three nondescript villages deep in the interior of South Garo Hills refusing to languish in the maelstrom of helplessness. For years unaccounted, the practice of jhum cultivation in the three villages of Dogring, Kunchung and Chitmang Gonggrot in Rongara Community & Rural Development Block of South Garo Hills had all but completely decimated forests and depleted streams and springs. For the 580 inhabitants of the three villages it was time for introspection.

A break from the vicious cycle of environmental degeneration and dismal economic doldrums comes in the form of implementation of the Integrated Watershed Management Programme during 2010-11. Under the project, the 108 number of households in the three villages were given 500 – 1500 rubber plants each which were planted in plots ranging from 1.4 hectare to 4.28 hectare each family. This project was implemented in convergence with the Rubber Board of India which provided subsidy to the new planters for maintenance of their plantation such as weeding and fencing. Now, the plants have attained the required girth for tapping of the latex.

Today, there is a flurry of activities in the rubber plantations in the area as people here are awaiting returns from this new economic venture. There is excitement and expectation in the air as each household can potentially earn Rs. 2.5 lakh to Rs. 8.50 lakh yearly from their plantation. This is a far cry from the meagre produces from their jhum fields which had beset the villagers in the past. With a large dose of diligence, vision and foresight, the people in the three villages can now forge ahead the passage of time and create a new life for themselves and in the process, reaping the bounty of a rejuvenating natural environment.



South Garo Hills

East Khasi Hills District

When The Levee Stands

A bold initiative of feeding a stream that had gone dry is an unprecedented effort by any standard. Yet, this is what has happened when the people of Mawlyngbna village applied indigenous technology to feed water from one perennial stream to another seasonal stream in the area. Diversion of water from the Umsuloi stream to the Umkhakoi stream was done by using PVC pipes over gorges and trees. The sagging of the PVC pipes is controlled by tying the pipe with a G.I. wire of about 8 or 10 gauge sizes. In this way, Umkhakoi which is a seasonal stream is rendered perennial.

For the 340 odd families of the village, the steps taken provide succour to their horticultural crops particularly during the dry months but it is evidently not enough. However, the initiative taken by the community here was bolstered through the intervention of some Governmental departments. Working in convergence, these Departments which include Soil & Water Conservation, Community & Rural Development, Integrated Basin Development and Livelihood Programme chipped in. A concrete cement headwork was constructed so that more water could be impounded and diverted to increase the stream discharge of the Umkhakoi. To harvest and store the water so diverted, a headwater dam was constructed to act as a small multi-purpose reservoir. The water from here was conveyed by laying of G.I. pipes for a distance of two kilometres. Three distribution tanks were constructed to distribute irrigation water for agricultural lands as well as horticulture plantations. Under this, a total of 140 families were benefitted. To ensure sustainability, a water users committee was formed in which the families benefitted contribute Rs. 100/- per year as user charges to maintain the assets created.

During 2011, an amount of Rs. 10 lakh was sanctioned under Integrated Basin Development and Livelihood Promotion Programme(IBDLP) by which the height of the headwater dam was further raised by 2.5 m and an additional length of 1.8 km. G.I. pipeline was laid. This had brought an additional area of 35 hectares under irrigation in which 120 more households were benefitted. The surface area of the impounded water was increased from one hectare to two hectares. As an icing in the cake, the Fisheries Department had also contributed in the form of fish fingerlings which were released in the waters of the reservoir.

The Mawlyngbna small multi-purpose reservoir had opened up a new chapter in the lives and occupation of the people of the village. Besides the direct benefits accrued from the assets created under the project, the people here were introduced to the concept of community organization which brought them tangible and concrete results in terms of economic and natural resources management. With foresight, vision, a little ingenuity, grit and tenacity they are well on the way to sustain the impetus they had gained through the projects implemented.

East Garo Hills

Harvesting Nature's Bounty

Cascades of rainwater literally flowing down the drain are things that are always took for granted. It is a paradox that almost always times of plentiful precipitation go hand in hand with times of water scarcity. This phenomenon is no exception in East Garo Hills, that is, until an ambitious project was launched in over 10 schools of the district to harvest, collect and store rainwater for later use.

Under the initiatives taken by the East Garo Hills Division of the Soil & Water Conservation Department, the project 'Rooftop Rainwater Harvesting' was launched in 10 schools involving a total project cost of Rs. 35.00 lakhs. This is a technology where water from rooftops is collected or harvested through a simple pipe or gutter system and channelled to a storage tank. This project had facilitated storage of a total of over 150000 litres of water.

The benefits of the system are that water is obtained from a relatively clean and free source; it is harvested in-situ (where it is); it is safe for use and beneficial for the landscape and plants. At the same time, it reduces storm water run-off. The system is also cost saving, simple and flexible and is self-sufficient and socially acceptable.

For the 700 odd students and management of the 10 schools in which the rooftops rainwater harvesting structures are in place, it is a well-placed windfall. Now, they can splurge water on all their requirement of cleaning, washing and even cooking.

Milestone Tread Of Syntu Ksiar Minor *West Jaintia Hills*

The historical Syntu Ksiar under the picturesque Pynthorwah Valley of the famous Myntdu River of West Jaintia Hills District is the location of a century long stone pitching dam, the impounded waters of which fed the large part of the Pynthorwah paddy fields, one of the very few 'rice bowls' of the District. The old dam was a collective result of the hard and painstaking labour of the farmers over the years to put stone over stone to create some sort of barrier to impound the flowing water for diverting it to their land. The dam though catered to a large culturable command area could not meet the demand due to its limitation.

In the year 2009-10 the water users/beneficiaries approached the office of the Divisional Soil & Water Conservation Officer, Jowai Terriorial Division to reconstruct the Dam with a permanent RCC Structure so as to improve the irrigation potential of the Dam and to come up with a plan to reduce the maintenance cost which was incurred annually.

Thereafter, the office prepared a Detailed Project Report for the whole Upper Myntdu River Valley under the Accelerated Irrigation Benefits Programme (AIBP) and the same was sanctioned by the Ministry of Water Resources, GOI in the same year.

In the year 2011-12 the old structure was dismantled and a new RCC Dam was constructed. The office, along with the active involvement of the stakeholders, was able to complete the Dam successfully within a brief period of time without disrupting the sowing season. The new structure has increased the irrigation potential of the Dam, thereby providing sustainable water-use to the beneficiaries and enabling them to adopt better agricultural practices for increased crop production.

The Dam was constructed at a cost of Rs. 58.06 Lakhs and it directly provides irrigation to a net command area of 26.00 hectares of agricultural land belonging to 10 families. The end result is that it has provided a range of economic, environmental and social benefits including recreation, flood control and water supply.

The same was inaugurated by Dr. R. C. Laloo, the then Minister, Govt. of Meghalaya i/c Soil & Water Conservation, etc. on the 16th June 2012.

It is worth mentioning that the Jaintia Hills Autonomous District Council, along with the Jaintia Fishing & Environment Protection Association, Jowai, recently declared the upstream portion of the Syntu Ksiar Irrigation Dam as a 'FISH SANCTUARY' within a period of 4 (four) years from the date of completion and it has brought immense satisfaction to know that the Department has simultaneously contributed to the preservation of the environment.

Mantle Of Protection

East Jaintia Hills

Strategically placed, the Umkiang Market in East Jaintia Hills District had serve as a vital economic centre for several villages in and around it and for traders and consumers coming from far flung areas. For years unaccounted, it had served not only as a conduit of goods, wares and products of the area but had provided the villagers with a base with which they can have economic interactions. The downside is that this market which is situated along the banks of the Umkiang River is subjected to the fury of the elements in the form of a flood which eroded the river banks, eating away at the market space bits by pieces. An annual ritual in this market is the shoring up of the river banks with gunny bags which is a herculean task for the people and sadly, temporary in nature. Besides, the market had no proper drainage and therefore prone to flooding. Some of the stalls are ramshackle structures with no roofs.

It was on such a scenario that the East Jaintia Hills Soil & Water Conservation Division made an intervention by implementing the Rural Infrastructure Development Fund-XX. Through this project, an RCC Protection Wall was erected along the bank of the Umkiang River to prevent the water from eroding the river bank at the market. Through the construction of this wall, the eroded lands were able to be reclaimed facilitating the setting up of over 30 additional market stalls. This had greatly benefitted those traders who had to face the discomfiture of squatting on open ground while plying their trades. Moreover, with the completion of the wall, the people were saved the arduous task of regularly having to build temporary embankment year after year. In this process, over 1800 mandays were saved every year. Besides giving the market a face-lift through construction of drainage and proper stalls, a footbridge was built across the nearby River Pahar to facilitate easy access of people and goods coming to the market.

The long term benefits of the make-over of the Umkiang market is an outstanding example of what could be achieved through judicious implementation of the intervention processes. The permanency of the protection wall imbibes confidence among the traders and its psychological and practical impact is immeasurable given the dismal conditions pre-project.

Harvesting Stream

North Garo Hills District

A new episode in the life of the farmers of Chima Impel village is as surprising as it was unexpected. The villagers here at the Kharkutta Community & Rural Development Block in the North Garo Hills District had no inkling that the implementation of the Middle Chill River Valley Project under Har Khet Ko Pani (former AIBP) would change their agricultural fortunes.

In 2014-15, the North Garo Hills Soil & Water Conservation Division completed the RCC Irrigation Dam along with 430 metre long channels primarily with the aim of harnessing the waters of the Impel stream and channelizing it as irrigation water to the fields of the farmers here. This structure which was constructed at a cost of Rs. 49.40 lakh proves to be a boon to the farmers. Besides stemming the tide of the Impel stream with its inevitable penchant for destruction, erosion and run-off, the dam had been able to store substantial volume of water. Now, the water can be regulated and channelize to the fields according to the needs of the farmers. No more did the farmers of this village need to construct earthen channels year after year. Again, with enough supply of irrigation water, the practice of leaving a portion of the farmers field fallow due to lack of water was stopped.

The visible result of the implementation of the project here is that over 16.50 hectare had been brought under assured irrigation in which 85 numbers of households were directly benefitted. Now, there is a quantum leap in the production of crops from the erstwhile 24 quintal per hectare to 36 quintal per hectare. This is no mean achievement to a people who had all along been accustomed to mono-cropping. Today, after paddy, the people were able to plant Rabi crops. The construction of the dam had had a telling effect on the life of the farmers of Chima Impel village as they can now improve and increase their production of crops and come off better placed economically than they were before.