

People's Action for Commons

I. Area of implementation: around 950 villages of 14 blocks of 9 districts (3 districts from arid zone remaining 6 from Semi arid) of Rajasthan

II. Physical and Social Challenges: The area where Chauka system invented and applied in very beginning is come under agro-ecological sub-region (AESR 4.2), which is characterized by hot semi-arid ecosystem with grey brown alluvium derived soils. The major constraints in this region were are coarser soil texture and low plant available water capacity (AWC); over exploitation of groundwater, resulting in lowering of groundwater table in some areas. At places, imperfect drainage conditions lead to spread of surface and subsurface soil salinity and/or sodicity (Gajbhiye and Mandal).

The area is characterized by gently sloping topography (0.5-3%). Though the depth to water level in general is not much, but in most of the areas after 40-50ft. of underground water level, bed rock formations are found with the result that sub-soil water for irrigation is limited (Directorate of Census Operations, Rajasthan). It is extremely important, therefore, to develop local level solutions taking into account the biophysical characteristics of the region, for which innovative soil and water conservation measures need to be developed.

The land has degraded over a period of time because of overexploitation from increased human and livestock population pressure. The village commons are affected more severely and are also shrinking. Despite provisions under various government programmes that tried to address these issues, lack of awareness, vested interests of selected few and poor commitment of local leadership has hampered effective and efficient management of common lands. Simultaneously, infestation by invasive species, viz. *Prosopis juliflora* has further led to indiscriminate spread of the species affecting access and optimal use of land and water resources. Increased drought conditions (for example, dry spells, erratic rainfall) in the past 24 years have led to decline in crop production and availability of crop residues for livestock. In addition, natural fodder resource base (grasses, shrubs and trees) has also decreased. All the above factors have resulted in increased vulnerability of the crop-livestock production system in the region.





Livestock production, specifically, is more pre-dominant in the area. Fodder scarcity, therefore, is emerging as a key constraint for livestock-keepers. Recognizing differential vulnerabilities exist for different categories of communities based on their respective livelihood profiles, the category of small and marginal farmers (accounting for 49% of total farmers) is relatively more vulnerable to fodder scarce situations due to their higher dependence on village commons.

Though there are various state and central government schemes and programmes, NGO programmes, and academic institutions and research organizations focusing on improving rural livelihoods, however, lack of convergence of efforts coupled with political will limits the rural communities to fully capitalize on various initiatives.

GVNML Initiated Innovative Approach: GVNML over a period of time evolved and standardized an innovative model called the “*chauka*” system befitting local geology and soils for managing the land and water resources on the village commons. The *Chauka* system, most suitable for grazing lands, helps to break up a long slope into several short ones. This reduces the velocity of water runoff, and also reduces soil erosion. The system was first implemented in Dudu tehsil of Jaipur district in Rajasthan. This model is now recognized by the Government of Rajasthan and international donor and support organizations as a viable model for the area. This model has been incorporated into the MNREGS guidelines (in the year 2012). The model has also received appreciation in the form of various awards from Government departments and agencies both at the state and central level.

The technical component of Chauka is mainly capturing of rainwater on the common land in order to increase soil moisture and also to collect the runoff in a local water body viz. naadi. This system is expected to enhance the growth of grasses, shrubs and trees and thus increase fodder resources as well as meet the drinking water requirements of livestock. The most pronounced benefit of this innovative system has been an increase in the availability of drinking water for cattle and green fodder. From the evaluation reports of previous projects it is noted that the water availability for cattle increased from 3 months to 9 months. Similarly, the availability of grasses for grazing increased from 4 months to 8 months.

III. Cost effectiveness of the innovation/ technology: The technology is cost effective because it has only earthen work, Chauka haven't cemented or stone masonry (both dry and wet) construction so cost effective as well as eco-friendly. It is Rs. 25,000 per hectare cost of Chauka construction while we calculate whole area treatment which cost comes around 5-7 thousand per hectare instead of it Watershed development cost in IWMP projects have provision of Rs. 12-15 thousand per hectare that remarkable higher than Chauka application cost. Chauka also have social as well as earth work cost, seeds purchasing, seeds sowing, seed broadcasting.

Once Chauka constructed it remains up to 10 year and after 10 year only 10% cost required for repairing/re-strengthening of earthen bunds.

IV. Replicability of the technology: The technology is replicable in all arid and semi arid area where horizontal land slop are up to 3%. As according to the study done by MPUAT (Maharana Pratap University of Agriculture Technology, Udaipur), a government University studied the Chauka system and developed a manual "A Manual on Chauka system" as well as some books published by University professor stating that Chauka system is the best technology for Pasturelands and range lands for moisture conservation/moisture fixing in subsurface areas. The Central Ground Water Board and Central Ministry of Water Resource have included Chauka as best practices and broadcasted on its officials website - <http://cgwb.gov.in/Best-practices.html> and <http://mowr.gov.in/ngo-initiatives> and http://mowr.gov.in/sites/default/files/BP_NGO_0.pdf at page no. 79-81 in section N-47

v. Increase in water use efficiency:

Chauka system applied in around 350 villages and in these villages animals can graze green grass for 9 months out of 12 and remaining 3 months they graze tree leaves of fodder trees like acacia nilotika, prosopis cineraria, caparis desidua etc. specially small ruminants So fodder crop production reduced remarkably. Simply in a village 50 Bigha (12.5 hectare land) used in fodder crop so $350 \times 12.5 = 4375$ hectare land not need to irrigated 4/5 times in a crop season by ground water so the huge amount of ground not withdrawal from ground. It is water use efficient model.



Second the rain water stored in Chauka percolated in 24 hours so there are very minimal evaporation losses.

vi. Total benefits accrued (tangible & intangible) :

- Tangible :**
1. Grass density increased by 322% that is being using by domestic animals and wildlife.
 2. Tree density increased by around 1200%, tree seeds sown on Chauka bunds at the time of Chauka construction. And tree cutting, hunting/poaching is totally banned in these villages.
 3. Migration with animals stopped 100% (case study attached) migration in search of food is stopped 67-82% in villages where Chauka applied.
 4. Milk production increased by 4 times so Jaipur Dudh utpadak Sahakaari Samiti (Saras dairy) installed a big chilling plant in Laporiya (one of centre village of Chauka area). Laporiya is small village even not Gram Panchayat head quarter had a big size chilling plant.
 5. Agriculture production increases by 3 to 4 times because 65% cultivable and irrigation area increased.
 6. Ground water level increase by 2-3 meter in last 20 years.

- Intangible:**
1. Chauka supports local flora and fauna so Biodiversity of the area is saved. Multi culture is promoted and mono culture is avoided.
 2. People of these 350 villages use milk that produces from useful herbs and medicinal values tree leaves, because staff feeding is avoided and roaming grazing is promoted.
 3. Many social problems like increase enrolment in school because migration of families with animals and migration in search of employment is stopped.
 4. Water Quality is improved so many health problem like florosis, arthritis, etc. reduced

vii. Awareness generated

The Chauka system has technical components as well as social component, social component includes developing village level institutions to manage the common lands. An approach and strategy was developed in order to ensure sustainability of these village institutions. The focus is on developing capacities and confidence of the members of village institutions with a view to develop leadership and working capacity. The members are encouraged to lead the dialogue and interactions with the government functionaries at all levels. This helps in sustaining the village level institutions in the long run.



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spread of the species affecting access and optimal use of land and water resources. Increased drought conditions (for example, dry spells, erratic rainfall) in the past 24 years have led to decline in crop production and availability of crop residues for livestock. In addition, natural fodder resource base (grasses, shrubs and trees) has also decreased.

GVNML aims to strengthen green cover of the area and trying to balance between human and nature leads to a better environment. GVNML implementing many social as well as technical work in this direction since 1977 and specialized tailored social work since 1986. Following is main concepts we applying:

1. Padyatra, literally foot march but it has organized with people based function – Talab, Ped, Panghat Pujan (resource worshiping), offering of Puskaar Water to local talab, and then oath taking by holding holy threads in both hands with a message of disciplinary use of village natural resources, after that the threads tie to nearby trees by declaring brotherhood relation with trees. After all village meeting which have agenda of management of village resources, problems in livelihood securing structure, problems relating to greenery. During the meeting people also facilitated to declare their role for environment and greenery, villagers say that they will plan such and such no. of tree on common land and private land, people also declare that they will sarmdaan at Naadi or at Talab, they will follow the rules made under Khulla Chidiya Ghar (eco-park).
2. Dhundhar, Mewar and Marwar Ratan Award : GVNML trying to develop a cadre of eco-volunteers and in this direction we identify those people who already engaged in environment balancing activities like planting trees, saving land from encroachers/mafia, conserve rain water etc. after identification GVNML support them, recognize their efforts and thank them that resulted in better performance of such efforts. Those are role model for other will have selected for award. If anyone from Dhundhar area (Jaipur, Ajmer, Tonk, Dausa, Swaimadhopur) will be awarded by Dhundhar Ratan Award, same for Marwar and Mewar Ratan Award. This is a people based campaign for saving nature.
3. Plantation: Every year at the time of Mansoon, GVNML team has arranged plant of benian tree and other long life shadow tree for villagers and for those who declare that they will plan trees of such number. People of the area is know that GVNML provide them plant for greenery and they plant these trees, mainly at common places but few of them also plan of their own land, this efforts implementing since 1988.
4. Raksa Sutra: GVNML call people once in a year to take oath for do's and don'ts for the village and as well as our selfishness efforts for village development. The oath is being taken every year at the time of Padyatra by holding holy thread locally called Molly and after oath the thread is being tiding on trees by making brotherhood relation with trees.

