



CHAUKA SYSTEM

A WATER CONSERVATION PRACTICE

AS A PART OF COMMUNITY RESOURCE

MANAGEMENT

A SLEM BEST PRACTICE

Indian Council of Forestry Research and Education has documented Chauka System- A water conservation practice as a part of Community Resource Management best practices for sustainable land and ecosystem management (SLEM) under the World Bank funded SLEM Project.

Water is the most critical resource for survival in the arid and semiarid region. Rainwater conservation, runoff harvesting and storage in village pond are traditional practices for managing water for drinking, ground water recharge and agriculture purpose. Chauka is a runoff harvesting and water conservation practice primarily undertaken on community pasture lands for utilisation by the communities. Chauka system is mainly practiced to make fodder available for sustenance of livestock as an integrated part of the farm development.

Under Chauka system rainwater runoff is collected through making small rectangular pits (Chauka) on pasture as well as on community lands to enhance groundwater availability and to judiciously utilise the collected rain water.

Chauka has increased the availability of fodder, besides the local grass species, drought and water scarcity has been prevented through conservation of rain water, biodiversity conservation and judicious usage of natural resources.



What is Chauka?

A Chauka is a rectangular structure (a pit) surrounded on three sides by soil bunds. A Chauka is constructed across the slope to check the runoff. A mild slope of 1.5-2% is considered as ideal. The bunds of Chauka are made from the soil available from making small pits inside the Chauka. These small pits made inside the Chauka serve as additional resources and contribute to enhanced water conservation.

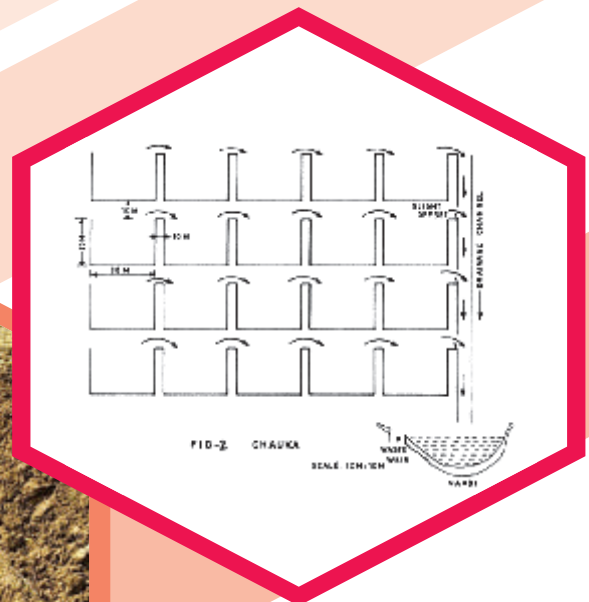
Requirements for chauka construction

Following important considerations are required to be kept in mind while making effective chaukas:

- ▶▶ Slope of the land
- ▶▶ Drainage channels available in the area
- ▶▶ Features of the adjoining areas

Practice

- ▶▶ Chauka system can be adopted in common property land of the village. Any kind of land including degraded lands can be utilised for Chauka system.
- ▶▶ A chain of Chauka are constructed in a checker-board pattern on the whole area available for pastureland which may vary with the region and across the slope. There is no set criterion for the quantity of land required as it can be adopted on any land being currently used as pastureland.
- ▶▶ The size of a Chauka should be such as to allow only up to 9 inches of standing water. The dimensions may vary with the land available and calculated accordingly.
- ▶▶ All the Chauka and their chains remain interconnected through small drains.
- ▶▶ All these small drains join together to form a large drain which falls into the community pond available in the area, and where the water is conserved and can be used for irrigation, fish farming and for drinking by livestock.
- ▶▶ The bunds of the Chauka obstruct the flowing water which gets collected in the lower parts inside the Chauka
- ▶▶ The water thus collected during the heavy rains, passes through the chain of Chauka through the interconnecting drains and feeds the community pond.
- ▶▶ There are three main systems of constructing Chauka and the selection of the system is made on the basis of the slope of the land.
- ▶▶ Judicious selection of the system governed by the land type is absolute must for the success of the Chauka.
- ▶▶ The collection of water inside the Chauka must not exceed 9 metres, so as to prevent any negative effect on the growth of grasses.



Fodder and grass species that can be planted in Chhattisgarh and Madhya Pradesh under Chauka system

Fodder Species: *Calopogonium muconoides* (Wild ground nut, kalapo), *Centrosema pubescens* (Butterfly pea), *Desmodium* spp., *Stylosanthes guianensis* (Pencil flower, stylo), *Vigna umbellata* (Rice bean), etc.

Grass Species: *Brachiaria brizantha* (Bread grass), *B. Mutica* (Baffolo grass), *Cynodon dactylon* (Doob), *Dichanthium annulatum*, (Hindi grass, karad, bansi), *Heteropogon contortus* (Black spear grass), *Panicum maximum* (Guinea grass), *Pennisetum clandestinum*, *P. pedicellatum*, *P. Setaceum* (Fountain grasses), *Setaria sphacelata*, (African bristle grass), *S. glauca*, *S. verticillata*, *S. viridis*, *Urochloamos ambicensis* (Buffalo grass) etc.



Benefits of Chauka system

- ▶▶ Channelizing and regulating runoff
- ▶▶ Recharge of soil water
- ▶▶ Pasture improvement and building drought resilience
- ▶▶ Improving the availability of water in the community ponds
- ▶▶ Conservation and recharge of groundwater resources.
- ▶▶ Enhancing land productivity and
- ▶▶ Improving the biodiversity of the region

Indian Council of Forestry Research and Education (ICFRE), Dehradun as Ecosystem Services Improvement Project Implementing Unit (ESIP-PIU) is building the capacity of the local communities of ESIP project areas of Chhattisgarh and Madhya Pradesh for upscaling of Chauka System- A water conservation practice as a part of Community Resource Management: A SLEM Best Practice.

Brief About ESIP

The World Bank funded Ecosystem Services Improvement Project (ESIP) supports the goals of the Green India Mission by demonstrating models for adaptation-based mitigation through sustainable land and ecosystem management and livelihood benefits. ESIP will introduce new tools and technologies for better management of natural resources, including biodiversity and carbon stocks. Main components of the project are: strengthening capacity of government institutions in forestry and land management programs, improving forest quality, and scaling up of sustainable land and ecosystem management (SLEM) best practices. ESIP is being implemented in the states of Madhya Pradesh and Chhattisgarh by Indian Council of Forestry Research and Education, Chhattisgarh State Forest Department and Madhya Pradesh State Forest Department under the overall direction of Ministry of Environment, Forest and Climate Change, Government of India.

Brief About ICFRE

Indian Council of Forestry Research and Education (ICFRE) is an autonomous body of the Ministry of Environment, Forest and Climate Change, Government of India. It is an apex body in the national forestry research system that promotes and undertakes need based research, education and extension in the forestry sector. It has a pan India presence with its 9 research institutes (Arid Forest Research Institute, Jodhpur; Forest Research Institute, Dehradun; Himalayan Forest Research Institute, Shimla; Institute of Forest Biodiversity, Hyderabad; Institute of Forest Productivity, Ranchi; Institute of Forest Genetics and Tree Breeding, Coimbatore; Institute of Wood Science and Technology, Bengaluru; Rain Forest Research Institute, Jorhat and Tropical Forest Research Institute, Jabalpur) and 5 centers located at Agartala, Aizawl, Prayagraj, Chhindwara and Visakhapatnam. Each institute are directs and manages research, extension and education in forestry sector in the states under their jurisdiction.

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