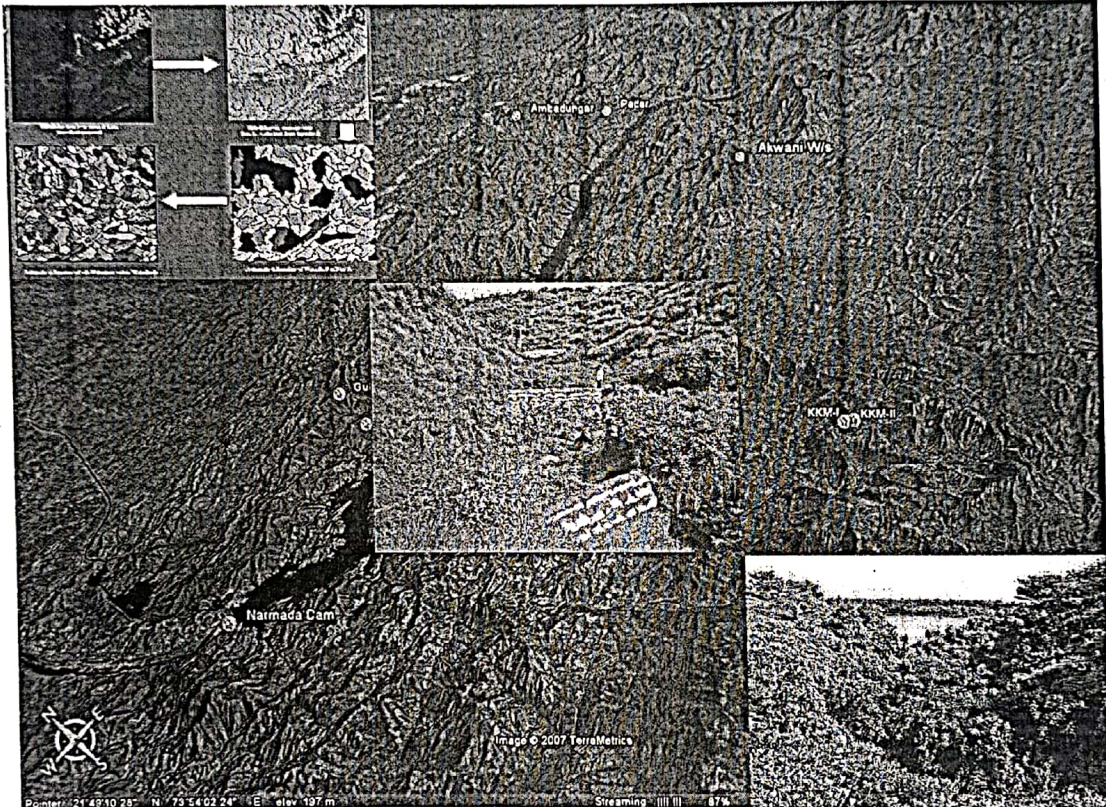




TRAINING MANUAL
ON

ADVANCES IN WATERSHED PLANNING AND EXECUTION



2nd to 7th May, 2011

COMPILED BY
G.L. BAGDI
R. S. KUROTHE

केन्द्रीय मृदा एवं जल संरक्षण अनुसंधान और प्रशिक्षण संस्थान
अनुसंधान केन्द्र, वासद - ३८८३०६, जि: आणंद (गुजरात)

Central Soil & Water Conservation Research & Training Institute
Research Centre, Vasad – 388306, Dist: Anand (Gujarat)

Content

Sr.No.	Title	Author
1.	Watershed Management – an overview	Dr. R.S. Kurothe
2.	Introduction to mechanism of data management for watershed project.	Dr. A. K. Vishwakarma
3.	Conservation agronomic measures for soil and water conservation	Dr. A Vishwakarma
4.	Application of advance tools (Remote sensing, GIS&GPS) for watershed planning	Dr. D.R. Sena
5.	Information extraction through remote sensing, GIS and GPS	Gopal Kumar
6.	Soil resource appraisal for watershed development	Dr. A Vishwakarma
7.	Planning, design and execution of drainage line treatment structures in watershed projects	Dr. B K Rao
8.	Conservation measures for Non-arable land	Dr. R.S. Kurothe
9.	Area treatment technologies (land leveling, bunding, terracing and trenching) in watershed projects	Dr. B K Rao
10.	Vegetative measures for soil and water conservation	Sh .V.C. Pande
11.	Peoples participation in watershed projects (Planning and execution)	Dr. G.L. Bagdi
12.	Participatory monitoring and impact evaluation of watershed project.	Dr. G. L. Bagdi
13.	Economics of watershed management	Sh.V.C. Pande
14.	Impact assessment of watershed treatment technologies in watershed projects	Dr. B. K. Rao

Assessment of Watershed indices

	Indices	Data required	Procedure
1	Ground water recharge	Recharge of well (Water table data in the wells)	<input type="checkbox"/> Impact of on Ground Water Recharge will be assessed from the collected data about rainfall , land use, cropping pattern, ground water recharge structures, water harvesting structures in the watershed from the implementing agencies / villages / secondary sources.
2	Erosion Status	Change in top soil layer and quality)	<input type="checkbox"/> Survey of water harvesting structures / soil conservation measures will be done to know about deposited soil over years with respect to catchment/watershed area. Volume of soil deposited behind the structure will be divided by catchment area and year to know soil loss per ha per year.
3	Vegetative coverage in watershed	i. Crown/canopy coverage, ii. Grass yield iii. Fuel, fodder and other non-timber products iv. Status of its availability to the community	<input type="checkbox"/> To be assessed from pre and post project Satellite imageries and ground truthing. It will be extended to whole cluster depending on availability of data <input type="checkbox"/> Working out grass yield, fuel and fodder availability from available data.
4	Design and Estimate	Adequacy of cost of treatment Durability and Sustainability	<input type="checkbox"/> Information about design details of structures (SWC and WHS) constructed in watershed will be evaluated by <ul style="list-style-type: none"> o Hydrological evaluation of peak flow adequacy o Cost of structure/ cu-m of water o Structural design for its durability. o Assess maintenance schedule for sustainability.
5	Area under crop	Change in net sown area, Wasteland brought into cultivation, Cropping intensity data	<input type="checkbox"/> Primary as well as secondary survey will be used to estimate the net area sown with different crops during pre-project and different years of project implementation and post project. <input type="checkbox"/> Change in area under crop cultivation during different years of the project implementation will also be worked out. <input type="checkbox"/> Result will be extended for the whole cluster using satellite and ground data depending on feasibility
6	Crop production	Estimate in crop yield (Pre and post watershed data and also year-wise data analysis within the watershed project period and beyond)	<input type="checkbox"/> Yield data of different crops will be collected and analyzed for determination of pre-project and post project implementation scenario in respect of area production and productivity of different crops. <input type="checkbox"/> Depending upon the response trend in yield of the individual crops projection will be made beyond the project period.