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Connect me: Google Scholar: https://scholar.google.com/citations?user=UdsgmRIAAAJ&hl=en ResearchGate: https://www.researchgate.net/profile/Prashant_Shrivastava LinkedIn: http://www.linkedin.com/in/prashant-kumar-shrivastava-898898191 Facebook: Prashant Shrivastava Twitter :P K Shrivastava@pksnvs	

Dr. P. K. Shrivastava

Experience : > 35 yrs

S.No.	Designation	Institution	Month / Year
1	Principal & Dean	College of Agricultural Engineering & Technology, NAU, Dediapada	March 1, 2024 to Cont.
2	Dean	College of Forestry / College of Agricultural Engineering & Technology, NAU, Navsari	June 1, 2022 to Feb. 2024
3	Principal (I/c),	College of Forestry, NAU, Navsari	Apr., 2015 to 30.05.2022
4	Principal & Dean (I/c)	ASPEE College of Horticulture & Forestry, NAU, Navsari	Jan 2020 to April, 2022
5	Professor (Selection)	Department of NRM, Forestry, NAU	Jun., 2010 to Cont.
6	Professor (Promotion)	Soil & Water Management Research Unit, NAU, Navsari	Jul., 2006
7	Associate Research Scientist	Soil & Water Management Research Unit, NAU, Navsari	Jul. 1998
8	Assistant Research Scientist	Soil & Water Management Research Unit, NAU, Navsari	Feb. 1989

Education

1996	Ph.D. (Ag. Engg.) – specialization in Soil & Water Conservation Engineering, G B Pant University of Agriculture & Technology, Pantnagar, Uttarakhand	First Class
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1988	M.Tech. (Ag. Engg.) – specialization in Soil & Water Conservation Engineering, Jawaharlal Nehru Krishi Viswa Vidyalay, JNKVV, Jabalpur, MP	First Class
1986	B.Tech. (Agricultural Engineering), JNKVV, Jabalpur, MP	First Class

Membership:

- (i) Life Member of Indian Society of Agricultural Engineers. (LM-6313)
- (ii) Associate Membership of Institute of Engineers (India). (RAM-082191/0)
- (iii) Life Member Indian Association of Hydrologists (LM-1060)
- (iv) Life Member Indian Society of Soil and Water Conservationists (LM-968)
- (v) Life Member Soil Conservation Society of Indian (LM-2905)
- (vi) Member of Green Global Brigade, Gujarat State

Awards & Recognitions

- National Fellow award of Soil Conservation Society of India, of the Year 2022
- Certificate of Appreciation by Consulate General of Islamic Republic of Afghanistan for help and cooperation to Afghan student during Pandemic Covid 19
- Sardar Patel Agricultural Research Award (First Price) of 1996, Government of Gujarat
- Several best paper awards for oral / poster presentations in National Conferences / Seminars

Academic Achievements

Research Outcome	Nos.	Research Outcome	Nos.
Papers published in International Journals / Proceedings	8	Recommendations to the Farmers	21
Papers Published in National Journals (NAAS rated)	68	Popular Articles Published	15
Papers Presented in Conventions / Seminar, Lectures Delivered in Winter / Summer School	61 12	Workshop / Seminar / Conventions / Symposium attended	>50
Bulletin / Report	21	M.Sc. / Ph.D. Students Guided	7
Organized National Conferences / Seminar / Symposium	3		

Languages Known

Language	Read	Write	Speak
English	√	√	√
Hindi	√	√	√
Gujarati	√	√	√

Special Contributions:

- Major contribution in leading the faculty of forestry to achieve high rankings amongst the forestry colleges of the nation.

- Motivated the faculty members of College of Forestry to fetch several projects on forestry from state, central and other agencies.
- Successfully lead of Horticulture for 28 months which enabled to get the college of Horticulture accredited
- Lead the young team of Forestry to become one of the top colleges in the country, accredited by ICAR and ICFRE with high ratings.
- Motivated faculty to guide students which reflected in good number of students getting qualified at national level competitive examinations from both the colleges
- Convener of Agricultural Engineering Subcommittee of NAU – 2011 to 2012, 2018 to 2019 and 2022 to 23
- Promoted several farmers-oriented training programmes to the farmers of the region and delegate faculty members to guide farmers on their fields to deal with issue-based problems.
- Providing technical guidance to the general public / farmers in rural and urban areas on rain water harvesting and water management, since last several years.
- Closely involved in Planning, designing, execution, monitoring and reporting of sub surface drainage work in 180 ha area under Indo Dutch Pilot Project
- Contributed in research work on Micro irrigation and Drainage technologies which are being widely adopted by farmers of the region
- Prepared land use plan and executed drainage activities in 400 ha area of NAU, Navsari
- Planning and execution of water harvesting activities at NAU, Navsari
- Designed and executed watershed development in 150 ha AES, Paria Farm
- Soil and Water Conservation activities of main campus and Research centers of the University
- Major contribution in establishing Mega Seed Project funded by ICAR, at NAU.
- Active participation in Krishi Mahotsav
- Prepared several State Plan, ICAR and other agency projects
- Initiated compilation of weather data of Navsari and University Research Stations
- Comprehensive Development Action Plan of Surat for 5 yr Plan
- Worked as Editor of Annual report of NAU and University News Magazine 'Spectrum'
- Coordination of University project on Environment and Climate Change
- Associated Scientist in NAIP Project for Dangs

Member of Selection / Evaluation / Administrative Committees

- Member of ICAR - PRT team for Accreditation of Agricultural Universities
- Special Invitee in Fifth Deans Committee Report, Ag. Education Division, ICAR
- Indian Council of Agricultural Research, New Delhi
- Navsari Agricultural University, Navsari
- Junagadh Agricultural University, Junagadh
- Anand Agricultural University, Anand
- Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra
- Knowledge Consortium of Gujarat, KCG, Department of Education, Government of Gujarat

International Exposure:

S.No.	Country	Purpose	Year	Duration	Sponsor
1	United States of America	Tourist	2023	1 month	Personal
2	The Netherlands	36 th International course on Land Drainage at International Institute for Land Reclamation and Improvement / ILRI, Wageningen, The Netherlands from Aug 18 to Nov. 28		3.5 months	IDNP Network Project
		4 th International course on microcomputer applications in land drainage / ICMALD from Dec. 1 to 19	1997	3 week	IDNP Network Project
3 4 5 6	<ul style="list-style-type: none"> Germany France Belgium Luxembourg 	Tourist	1997	< week	Personal

Active participation in following Research Projects

Summary of Externally Funded Projects Handled

S.No.	PI/ Co-PI/ Other	Title	Year of Sanction	Amount in lakhs (Rs)	Funding Agency	Status
1	PI	Demonstration of site-specific water conservation technologies for improving deteriorating soil and water quality in the coastal South Gujarat	2017	79.82	DST	Completed
2	PI	Strategies to Mitigate the Impact of Climate Change	2012	656	GOG	Cont.
3	PI	Establishment of Centre on Environmental Studies	2009	100	GOG	Completed
4	Co-PI	Indo Dutch Network Project	1996	350	GOI (ICAR) - Dutch	Completed
5	PI	Integrated Watershed Development Project	2002	15	GOG	Completed

On Going

2012 to Continuing

Strategies to Mitigate the Impact of Climate Change

It is plan project of more than 565 lakhs funded by Government of Gujarat. In the project several multidisciplinary studies are being conducted on major crops of the

region. Impact of weather changes on crops and the strategies to reduce the impact is the main focus of the studies, however, monetary implications could not be gauged in few years. The current research studies are on irrigation scheduling on forest species and fruit crops.

(Principal Investigator)

There are 15 research projects on various aspects of forestry, sponsored by State and Central Government running in the college of Forestry under my supervision.

(Principal of College of Forestry since April 2015)

Completed

- | | |
|---------------------|--|
| 2018 to 2022 | Demonstration of site-specific water conservation technologies for improving deteriorating soil and water quality in the coastal South Gujarat
The project of Rs 79.82 lakhs, funded by Department of Science and Technology, Government of India. Water conservation technologies are demonstrated at several places in rural and urban areas around Navsari. (Principal Investigator) |
| 2005 to 2010 | Soil & Water Management Research Unit, Navsari
While working in this project, surface drainage system, watershed management and water conservation activities were conducted in micro watershed of Navsari Agricultural University campus and research stations of the University located across south Gujarat. Increase in water availability in university farm due to construction of ponds, pits, well recharging, bore recharging and piped conveyance of water was observed, while streamlining the surface drainage system for quick disposal of stagnated water. These interventions showed marked increase in income and visible changes in micro watersheds of the University. (Principal Investigator) |
| 2002 to 2005 | Research on Watershed Management, AES, Paria
In this state sponsored project studies on pitcher irrigation in mango, irrigation scheduling in onion and cashew were conducted. A model watershed was developed in the farm that harvested rain water in ponds which was later used for supplementary irrigation in mango, cashew and onion crops. A recommendation on micro irrigation in onion crop grown in <i>kyari</i> lands also emerged. Results on pitcher irrigation in mango proved economically viable and the results were implemented in large scale through KVK. (Principal Investigator) |
| 1996 to 2002 | Indo Dutch Network Project
This was an ICAR - Indo -Dutch Network project worth Rs 3.5 crore, in which studies on sub surface drainage and surface drainage were conducted in Segwa and Sisodara Pilot area, respectively. Sub surface drains were laid in 30 ha area and demonstrated to the farmers the increase in production levels from 70 t/ha to 148 t/ha and bringing down the salinity /alkalinity levels in the area in Segwa pilot. Looking to the results farmers themselves have started adopting the technology. The investment made in sub surface drains could be gained back in two to three years so the project proved to be highly viable. (Co-Investigator) |
| 1996 | Integrated Watershed Development Project
It was the world bank aided project worth Rs 25 lakhs, in which afforestation of tree species was done on the barren hills of Narmada valley (current Narmada district) to prevent soil erosion, along with soil conservation structures to stabilize erosion and land degradation. Information provided to tribal farmers on the use of land according to its capability. However, long term benefit could not be gauged during the project period. (Co-Investigator) |
| 1989 to 1996 | Soil & Water Management Research Unit
All India coordinated project on water management was operational in SWMRU, Navsari, in which several studies on drip irrigation, irrigation scheduling and fertigation were conducted on Banana, Sugarcane and tomato crops. Results and recommendations on drip and other micro irrigation are adopted by the farmers. (Co-Investigator) |

Research Outcomes in the form of recommendations / adaptable techniques / practices for farmers / scientific community / policy makers

2023	<p>Efficacy of Drip irrigation on Malabar Neem (<i>Melia composita wild</i>) Farmers of South Gujarat Medium Rainfall Zone II who intend to grow Malabar Neem (<i>Melia composita</i> Wild.) at 2 m x 2 m spacing, for industrial Agro-forestry, should follow check basins method of irrigation. The dimensions of check basins should be 2m top width, 1.7m bottom width and 0.15m height, for getting higher biomass production from 5 years old treeplantation, with 6.97 BCR. The irrigation schedule to be adopted at weekly interval in various months is as follows:</p> <table><tr><td>Month</td><td>February</td><td>March-April</td><td>May</td><td>October-November</td><td>December-January</td></tr><tr><td>Depth (mm)</td><td>50</td><td>70</td><td>80</td><td>50</td><td>30</td></tr></table>	Month	February	March-April	May	October-November	December-January	Depth (mm)	50	70	80	50	30				
Month	February	March-April	May	October-November	December-January												
Depth (mm)	50	70	80	50	30												
2018	<p>Development of Integrated rainwater resource management (iRaM) module for coastal areas of South Gujarat Farmers of south Gujarat coast are recommended to construct ponds in lower depressions of their field, to harvest rain water for improving ground water quality along with rearing of fresh water fish (Grass crap, Catla, Rohu and Mrigal). The pond may be constructed in 10% area of farm, with 3.0 m depth including 0.5m free board. They may rear fresh water fish even by collecting roof water or excess canal water by adopting integrated rainwater management model (iRaM).</p> <p>Irrigation scheduling of Teak seedlings grown in Nurseries It is recommended to farmers / state forest departments raising teak stump in net house nurseries to irrigate the seedlings on every alternate day, for getting seedlings with superior growth. The approximate quantity of water application (ml) in poly-bags of 10 kg size, during different months should be as follows:</p> <table><tr><td>Nov</td><td>Dec</td><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td><td>May</td><td>Jun</td></tr><tr><td>300</td><td>200</td><td>200</td><td>300</td><td>300</td><td>400</td><td>400</td><td>300</td></tr></table> <p>Assessment of land use / land cover changes in South Gujarat using Remote Sensing and GIS It is observed that Surat district recorded major shift (18.25 %) from forest area to Orchards, plantations and gardens. Marshy lands have increased in Navsari (28.90%) and Bharuch (2.38%) district. Built up areas significantly increased in Navsari (69.09 %) followed by Narmada (44.40 %) district. The barren land may be planted with suitable forest / fruit species which will provide environmentally sustainable economic growth of the region. Therefore, policy makers, state Agriculture and Forest departments are suggested to utilize the technique of Remote Sensing and GIS for assessing the changes in land use, at regular basis, to maintain the vegetative cover, essentially required to sustain the ecological balance of the region</p> <p>Effect of different salinity levels of irrigation water on clones of <i>Casuarina equisetifolia</i> From the two-season pot trial, it is informed to the scientific community that <i>Casuarina equisetifolia</i> could be grown successfully up to the 8.0 dS/m salinity of irrigation water without any remarkably reduction in biomass. Among the clones, clone IFGTBCE-1 is found to be more salt tolerant and could be grown up to 12.0 dS/m of irrigation water.</p>	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	300	200	200	300	300	400	400	300
Nov	Dec	Jan	Feb	Mar	Apr	May	Jun										
300	200	200	300	300	400	400	300										
2016	<p>Investigations on tree ring analysis (Dendrochronology) to monitor radial growth</p>																

	<p>responses of teak (<i>Tectona grandis</i> L.) to climate in South Gujarat</p> <p>1. Recommendation for Scientific Community: It is informed to the scientific community and state forest department that the mean ring-width-index chronologies of teak developed for Navsari from AD 1991-2015, Valsad from AD 1867-2012 and Dang from 1912-2012 of South Gujarat are useful in reconstruction of past climate mainly the rainfall patterns during drought years. Furthermore, it also indicates the major El Niño and drought years of India. These ring-width-index chronologies developed for the particular time periods at the three sites are also helpful in determining the unknown year in which the teak tree was felled.</p> <p>2. Recommendation for Farmers: The farmers of South Gujarat heavy rainfall zone-1 (AES-I & III) are advised to provide light irrigation upto the soil depth of 5 cm during March and normal irrigation upto the soil depth of 8 cm during peak growth period i.e. June to July, whenever there is a deficient rainfall, to enhance the radial growth of teak (<i>Tectona grandis</i> L.f.) in plantation.</p>
2015	<p>Time series analysis of weather parameters in relation to crop productivity</p> <ul style="list-style-type: none"> • Trend analysis of weather parameters and its relation with major crops of the region shows that crop physiology is directly getting affected which is impacting the crop productivity. • Scientists are recommended to evolve varieties of cereal, pulses, millets and vegetables crops, which could be sown late and of shorter duration, so that they can synchronize with a week's delay in onset and early withdrawal (1 week) of monsoon. • Water requirements of crops grown during <i>summer and rabi seasons</i> should be readjusted due to 8 % and 18 % higher evaporation in the region.
2014	<p>Roof top rain water harvesting for potable use Roof top rain water harvesting for potable use is recommended in areas suffering from acute water scarcity after monsoon. Storage capacity of tank should be approximately 1000 L/capita/yr., constructed in such a way that no light or air enters inside to prevent bacterial growth and the tank may at least 0.5 m above ground level to prevent direct entry of runoff water. Water from the tank could be pumped out by means of hand pump or electric operated self-priming shallow lift pump. Precautions to be adopted are:</p> <ul style="list-style-type: none"> ▪ Roof tops and conveyance pipes should be thoroughly cleaned at the time of onset of monsoon. First flush of rain water should be allowed to bypass the storage tank, as well as during long gaps between two rainy events. ▪ Roof water may be allowed to pass through gravel – sand filter, consisting of layers (30 -50 cm) of coarse sand, 25 mm gravel, 50 mm gravel to remove organic impurity. ▪ Calcium Carbonate powder kept in earthen pots (7 L capacity / 5000 L), tied with muslin cloth on the mouth may be submerged into the storage tank. ▪ Walls of tank could be white washed with lime solution. ▪ Anaerobic bacteria may develop with time which could be removed by boiling / adding 0.5 g tablet of chlorine in 20 L of water / storage of water in copper vessel for 8 – 10 hrs / by using commercially available UV filter. <p>Disinfecting drinking water against any microbial activity by storing water in a copper vessel To disinfect drinking water against any microbial activity, water could be safely stored in a copper vessel for 12 hrs and 24 h to reduce Coliform by 85% and 90 % and total bacterial count by 67 and 81 % respectively.</p> <p>Rainfall based crop planning for Dediapada Farmers of Dediapada taluka are recommended to proceed for sowing operations from 27th</p>

	<p>SMW (first week of July).</p> <p>Farmers are advised for in-situ moisture conservation and runoff collection in ponds for providing supplemental irrigation at the critical stages of rainfed crops after withdrawal of rainfall i.e. 36th SMW (first week of September) to get maximum production from rainfed crops.</p> <p>Need to develop new rice varieties in context of future global warming</p> <p>On the basis of controlled environmental condition, it is recommended that there is need to develop new rice varieties in context of future global warming. The significant yield reduction was recorded in all the three rice varieties viz. Jaya, Gurjari and GNR-2, when exposed to 5 % and 10 % above ten years of mean temperature of the crop growing seasons. Significant reduction was also observed in number of tillers/hills, number of panicles/plants, biomass and harvest index.</p>															
2012	<p>Rain Water Harvesting for sustaining ground water quality in coastal South Gujarat</p> <p>Farmers of the South Gujarat coastal region are recommended to harvest as much rain water as possible to maintain ground water quality below (EC=2 dS/m) as per catchment area as tabulated below. The suggested modes of harvesting in decreasing order of preference could be Pond, Check dam, Percolation pit, Percolation well, Trenches and Sub soiling, as per availability of land, catchment area, water demands, financial capacity, topography, rainfall pattern, soil type, vegetative cover and nearness to sea</p> <table><tr><th>S.No</th><th>Area (ha)</th><th>Mode of Harvesting</th></tr><tr><td>1</td><td>> 2</td><td>Pond & Check Dam</td></tr><tr><td>2</td><td>2 to 1</td><td>Percolation pit</td></tr><tr><td>3</td><td>1 to 2</td><td>Percolation well</td></tr><tr><td>4</td><td>< 0.5</td><td>Trenches & Sub soiling</td></tr></table>	S.No	Area (ha)	Mode of Harvesting	1	> 2	Pond & Check Dam	2	2 to 1	Percolation pit	3	1 to 2	Percolation well	4	< 0.5	Trenches & Sub soiling
S.No	Area (ha)	Mode of Harvesting														
1	> 2	Pond & Check Dam														
2	2 to 1	Percolation pit														
3	1 to 2	Percolation well														
4	< 0.5	Trenches & Sub soiling														
2010	<p>Percolation pit for clay soils of South Gujarat</p> <p>To harvest rain water and to maintain their water quality, farmers of coastal area of south Gujarat are recommended to construct a percolation pit near their bore well, in the available natural depression / monsoon drain. The size of pit could be 4.0 m long x 3.0 m wide x 2.0 m deep, along with 200 mm PVC strainer pipes up till 12 m depth inserted before digging the pit. It could help in marginally improving the water quality or prevent further deterioration in water quality. The pipe should be compulsorily capped at the top and should be about 0.6 m above ground to avoid direct entry of runoff or any rodent in the well.</p>															
2007	<p>Pitcher irrigation in young mango plants</p> <p>The farmers of AES– II of South Gujarat heavy rainfall zone are advised to adopt pitcher method of irrigation in newly planted mango orchard. They are recommended to fill either 1 pitcher of 10 L capacity or 2 pitchers of 7 L capacity per week, resulting in 50 % and 30 % water saving respectively, as compared to ring method of irrigation.</p>															
2006	<p>Fertigation through mini sprinkler in onion crop</p> <p>A feasibility study was carried out onionin (Puna Red) during <i>rabi</i> season in <i>kyari</i> land at Paria farm of NAU, during the years 2003, 2004 and 2005 using mini-sprinklers (MS) to determine the optimum fertilized dose through MS> Mini- sprinklers should be spaced at 3 m distance from each other and should be operated at 1.5 kgcm⁻² pressure. Irrigations may be applied at the interval of 11 days interval in January, 10 days in February, 8 days in March and 5 days in April. From the study it was found that phosphorus @ 50kg^{ha}⁻¹ and potassium @ 50kg^{ha}⁻¹ should be applied at the time of sowing as basal dose and remining N (in the form of urea) out of 100 kg^{ha}⁻¹ through mini sprinklers in three equal splits at 20 days interval, first dose as basal and subsequent splits at 20 days interval for getting better yield and economic returns. Fertilizer use efficiency for the best economically beneficial treatment was 100 % recommended dose of N with mini- sprinkler i.e. 125 Kg of N was 157</p>															

	<p>kg/ha-kg and that of second best 80 % of RDN, i.e. 187 kg/ha-kg and all the min sprinkler treatments were much above the surface irrigated control (93 kg/ha-kg). Economic analysis considering current prices and third year yield results showed highest benefits cost ratio of 1.5 : 1 and the second highest was in 80 % of RDN with MS, 1.37:1.</p> <p>Root Model of Onion Scientist who wish to know the root length with time of onion crop could use Subbiah and Rao model $RD_t = RD_0 + (RD_m - RD_0) * (t/t_m)^k$ Where RD_t = depth of root zone at any time t since date of planation; RD_0 = depth at which seed has been sown; RD_m = maximum depth of root zone; k = empirical constant</p>
2002	<p>Model SALTMOD for forecasting water table and salinity status due to irrigation and drainage Model SALTMOD is an effective tool to forecast various situation once the model is calibrated and validated for use in Segwa minor canal command. The model was used and recommended for scenario building and sensitivity analysis of various parameters due to changes in water table and salinities. The calibrated model is ready for prediction and design of drainage system in South Gujarat Agro Climatic situation.</p> <p>Model CROPWAT for estimating crop water requirements CROPWAT and CRIWAR models were use for estimation of crop water requirements of major crops of South Gujarat. These estimated water requirements were compared with water requirements observed from field studies conducted at the Water Management farm of GAU, Navsari. From the study it was recommended that both CRIWAR and CROPWAT models are the effective tool for quick estimation of crop water requirements that could be used for planning the water management programmes.</p> <p>Subsurface drainage in Ukai Kakrapar Canal Command In view of severe water logging (60%) and salinity & waterlogging (40%) in Segwa pilot area, pilot areas study was conducted in 28 ha area using closed sub surface drains (CSSD) at 30, 45 and 60 m spacings, out of which 15.2 ha area in singular system and 13 ha area in composite system. Use of envelope on drain pipe and necessity of gypsum application for minimizing sedimentation load in drain pipe was also studied. In both the drainage systems water table went down by about 15 cm, drainage water quality improved from 18.2 dS/m to 1.4 dS/m and exchangeable sodium percent (ESP) improved from 14.7 to 9.3 resulting in increase in sugarcane yield from 42 t/ha to 105 t/ha.</p> <p>In Sisodara pilot area the farmers were poor with smaller land holdings and were suffering from twin problems of water logging and salinity in 90% area, whereas water stagnation in 10 % area. On account of water logging it was not possible to install CSSD, hence open sub surface drainage system (OSSD) was laid in 16 ha area at different spacings. Due to this intervention, in the first year itself, water table dropped by 35 cm, EC improved from 16.3 to 12.3 dS/m, paddy yield increased by 300 % and cropping intensity more than 100 %.</p> <p>On the basis of Segwa and Sisodara pilot area research, OSSD or CSSD should be installed at 45 m spacing and 1 m depth, the bottom width of open drains may be 0.30 m, side slope of 1:1 and longitudinal slope should follow the ground slope or 0.001 m per m in flat topography. Drainage system not only helps in reclamation of saline water logged land but also increases crop productivity, cropping intensity and micro climate of the problem area.</p>
1994	<p>Nitrogen management in banana under drip method with mulches</p> <p>A field study on fertigation in banana was conducted in the fine textured heavy soils of GAU, Navsari, from 1991 to 1993 at Water management farm of GAU, Navsari. Results of the study revealed that the application on nitrogen through drip fertigation at 80 % of recommended dose in the absence of sugarcane trash mulch (STM) and 60, 80 and 100 % in the presence of STM gave significantly higher banana yield as compared to surface irrigation. All the drip treatments resulted in higher water expense efficiency (48 to 60 kg /ha/mm, better fertilizer use efficiency (110 to 248 kg/ha/m/N) and effective weed control</p>

	<p>(49 to 95 %) as compared to surface irrigation and normal fertilizer application technique. This indicated that as high as 60 % nitrogen fertilizer can be saved without significant ill effects on crop yield</p> <p>Effect of plant spacing and mulches on banana yield under drip irrigation system Banana is a major cash crop of Central Western India having high water requirement. Due to heavy surface irrigation, in some areas rise in water table and secondary salinization have started building up and also overuse of canal water has led to inequitable water distribution in canal commands. Therefore, an experiment was planned in heavy black cotton soils of Gujarat Agricultural University, Navsari to study the response of banana crop to drip irrigation, effect of mulches and schedule of irrigation through drip. The treatment comprised of nine drip irrigated treatments and one surface irrigated control. Three years pooled results showed that drip irrigation, in general increased banana yield as compared to surface irrigated control along with water saving of 30 %, 43 % and 56 %, in 0.45, 0.60 and 0.75 FPE (Fraction of Pan Evaporation), respectively. It was observed that drip alone could save water considerably without any reduction in banana production, drip coupled with mulches could simultaneously increase the crop yield in addition to water saving. Between the two mulches, sugarcane trash mulch (SM) was found better than black plastic. The maximum yield (66 t/ha) was recorded in the treatment of drip with SM and 0.75 FPE, which did not differ significantly from 0.60 FPE of the same combination, but significantly better than 0.45 FPE. The net income indicated that all drip remnants either alone or in combination with mulches, except 0.60 and 0.75 FPE of SM resulted in lower returns than surface method. But drip alone at 0.75 FPE resulted in almost same returns as surface method along with 30 % saving in water. However, by covering an additional area through the saved water gross income could be increase (doubled) in DSM 0.60 (Drip + Sugarcane Trash Much + 0.60 FPE) as compared to control.</p>
1993	<p>Study on sprinkler method of irrigation for sugarcane crop Experiment were conducted to study the response of sugarcane crop Co 6304 to sprinkler irrigation and irrigation scheduling in 1989-90 and 190-91 on heavy black soils of Gujarat Agricultural University, Navsari. The treatments comprised of 4 IW:CPE ratios 0.30, 0.45, 0.60 and 0.75 under sprinkler and 0.75 in furrow irrigation systems. Sprinkler irrigation increased sugarcane productivity by 17.5 % with average water saving of about 30 %. The best water use efficiency was 236.775 Kgha⁻¹mm⁻¹ in lowest ration of 0.3 of pan evaporation (PE) ratios, 0.45 gave highest yield of 97.23tha⁻¹ with 37.50 % water saving and increase of 22.47% in yield.</p> <p>Study on drip irrigation for sugarcane crop Experiments were conducted on heavy black soils of Water Management Farm, Gujarat Agricultural University, Navsari to study the response of sugarcane (Co 6304) to drip method of irrigation. Also, the study was made to find out the response of sugarcane to different levels of irrigations under drip method of irrigation. The treatment comprised of five Pan Evaporation (PE) ratios viz. 0.3, 0.4, 0.5, 0.6 and 0.7 under drip and 0.75 ratio for furrow plots. From the study it was found that drip system gave more than 0.5 t/ha yield under all the irritation levels. An increase in yield varied from 34 % to 50 % along with water saving of 7.6% to 50 %. The highest water use efficiency 9WUE) was 241.82 Kgha⁻¹mm⁻¹ in 0.3 PE ratio under drip. Whereas, it was only 90.23 Kgha⁻¹mm⁻¹ in furrow method. Considering the cane yield and WUE, in different irritation levels, 0.4 PE ratio under drip was best among the treatments under study. The system should be laid out at 100 cm lateral spacing and 50 cm dripper spacing operated at 1.2 Kg/cmsq. The drippers of 4LPH capacity should be operated on every alternate day for 23 to 36 min. during Oct. to Dec, for 29 to 36 min. durig Jan. to march, 30 to 41 min. during April to June and 17 to 23 min. during July to Sep.</p>
1992	<p>Feasibility of drip irrigation for tomato crop with mulches Feasibility study of drip irrigation with mulches on tomato crop, variety Rupali, was conducted in heavy black soils of Water Management Farm of GAU, Navsari campus from 1989 to 1992. The treatment comprised of (i) only drip with 0.4, 0.6 and 0.8 ratios of two</p>

	<p>days cumulative pan evaporation (TDCPE) (ii) Drip with plastic mulch 100 % coverage with 0.4, 0.6 and 0.8 ratios of TDCPE (iii) Black plastic mulch (BPM) with surface method & 0.8 IW:CPE ratio (iv) Sugarcane trash mulch (STM) with surface method & 0.8 IW:CPE ratio and (v) Control – surface method with recommended 0.8 IW:CPE ratio with 80 mm irrigation depth.</p> <p>From the study it was recommended to the farmers of Agro ecological situation III of South Gujarat heavy rainfall zone to irrigate their crop with drip and mulch their crop with sugarcane trash @ 10 tha⁻¹ or black plastic mulch to get 33 and 57 % increase in yield respectively. With drip alone drip could increase yield upto 42 %. Use of drip can result in as 44 % water saving and additional 0.78 ha areas could be irrigated with the saved water. The use of drip reduces weed incidences by about 55 %, while drip coupled with mulches can reduce the weed intensity by 90 %, fruit borer attack by 30 %. The layout should be one lateral for each row and drippers spaced at 1 m apart and each dripper of 4 LPH capacity serving 2 plants should be operated on alternate days. The farmers who do not afford drip system are advised to mulch their crop with either black plastic or sugarcane trash mulch @ 10 tha⁻¹ to have increased of 29 % and 27 % respectively, over surface method of irrigation.</p> <p>Study on drip irrigation for banana crop</p> <p>Study on drip irrigation on Basarai variety of banana crop was undertaken at Water Management Farm of GAU, Navsari campus from 1989 to 1992. The treatment comprised of (i) Drip with 0.45, 0.60, 0.75 of two days cumulative pan evaporation fraction (TDCPE); (ii) Drip + plastic mulch, 100 % coverage with 0.45, 0.60, 0.75 of PEF and surface control with IW/CPE ratio of 1.1 and 80 mm of irrigation depth. From the study it was recommended to the farmers of this region to adopt drip method of irrigation system along with sugarcane trash mulch @ 10 tha⁻¹ and irrigating the crop at 0.60 PE fraction, this would save 43 % water with simultaneously increase in yield of about 9 tha⁻¹. They will also get additional net returns of Rs 5000 over surface method, as per the price of 1991. With the saved water about 0.76 ha additional area could be brought under irrigation. In case where mulch is not available, the farmers could irrigate their crop at 0.75 PEF through drip to get almost the same returns but 43 % water saving. The system layout should be as two drippers of 4 LPH capacity per plant at 30 cm on either side of the plant with one lateral for each crop row.</p>
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National Level - Conferences / Winter Schools / Trainings Organized

2023	Chairman	NAU-IES-IUFRO Conference on Tree Based Diversified Land Use System: Augmenting Livelihood Security and Industrial Growth from February 15 to 17, organized by College of Forestry, Navsari Agricultural University, and Indian Ecological Society (PAU, Ludhiana, Punjab) at Navsari, Gujarat.
2022	Convener / Convener – Technical Committee	National Conference on “Innovative resource management approaches for coastal and inland ecosystems to sustain productivity and climate resilience”, organized by Navsari Agricultural University and Indian Society of Soil and Water Conservation, Sponsored by Jalshakti Ministry, ICAR, NABARD and Ministry of Earth Science from October 13 to 15, at Navsari, Gujarat
	Organizer	ICAR sponsored Short Term Training programme on “Recent trends in sustainable Utilization, Value Addition and Conservation of Non – Timber Forest Genetic Resources (NTGRs) from Jan 19 to 28 at College of Forestry, Navsari Agricultural University, Navsari
2018	Organizer	ICAR sponsored Twenty-one-day Winter School on Current and Emerging Trends for Conservation and Sustainable Utilization of Forest Genetic Resources”, organized at College of Forestry, Navsari Agricultural

		University, Navsari, from Oct. 24 to Nov. 14
2016	Organizer	National Conference on Palmyra Palm organized by College of Forestry, Navsari Agricultural University, Dakshin Gujarat <i>Neera Tadgud Gramuodyog Sangh</i> , Dedvasan and Khadi & Village Industries Commission (KVIC), Mumbai on January 7-8, 2016 at Dedvasan village of Mahua Taluka of Surat District.
	Organizer	National Seminar on “Forest and Tree Based Land Use Systems for Livelihood, Nutritional and Environmental Security” during December 21-23, at College of Forestry, Navsari Agricultural University, Navsari, in association with Indian Society of Tree Scientists, Solan

Design of Course Curriculum

Sl. No.	Details of the course	Whether new course or revised	The name of the degree programme	Year	Name of the University
1.	Special Invitee in Fifth Deans Committee Report, Ag. Education Division, ICAR for the courses of Forestry.	New / Revised Courses of Forestry	B.Sc. (Forestry)	2015	Education Div. ICAR
2.	Coordinating to finalize the course content of PG – Forestry with BSMA – VI Deans committee	Revised Courses of Forestry	M.Sc. (Forestry) Ph.D. (Forestry) specialization in FRM	2022	NAU

Courses Taught:

S.No.	Course Taught in recent past	Credit
1	Watershed Concepts, Project Formulation & Planning (WM – 521)	2+1
2	Land Use Planning & Watershed Management (AF – 612)	2+1
3	Watershed Hydrology & Resource Conservation (WM -524)	2+1
4	Disaster Management (PGS – 506)	1+0
5	Hydrology of Agricultural Lands (SWM – 614)	2+1
6	Fundamentals of Soil & Water Management (SWM 602)	2+1
7	Drainage in Agricultural Lands (SWM-710)	2+1
8	Sprinkler and Drip Irrigation System (SWM – 713)	2+1
9	Soil Conservation & Watershed Management (SWM – 705)	2+1
10	Advances in Irrigation & Drainage (SWE 607)	(2+0)

ANNEXTURE-I

I Full length Papers Published

2023	Sondarva, K. N., P. K. Shrivastava, P. S. Jayswal, A. P., Lakkad and V. A. Patel, Basic Morphometric Analysis of Watershed or River Basin Using GIS: A Review, Asian Jr. of Microbiol. Biotech. Env. Sc., DOI No.: http://doi.org/10.53550/AJMBES.2023.v25i03.013 , Vol. 25, No. (3) : : 474-478 (NAAS 5.00)
	N.K. Pampaniya, D. Nayak, S.V. Viyol, P.K. Shrivastava and R.J. Mevada. Surface Water Mapping using Google Earth Engine (GEE) for South Gujarat Forest, Indian Journal of Ecology, DOI: https://doi.org/10.55362/IJE/2023/0000 : (NAAS 5.79)
	D. D. Champaneri, K. D. Desai, T. R. Ahlawat and P. K. Shrivastava . Assessment of Various Uniformity Aspects under Surface Drip Irrigation System in Tomato, International Journal of Environment and Climate Change, Volume 13, Issue 3, Article no.IJECC.95499 ISSN: 2581-8627, Page 47-55 (NAAS 5.13)
2022	Dileswar Nayak, Nilam Surve and Shrivastava, Prashant Kumar . Assessing Land use and Land cover Changes in South Gujarat, Ecology Environment and Conservation 28 (4) : 2110- 2115 (NAAS 5.41)
	Ashish Vasant Sonawane and Shrivastava, Prashant Kumar . Partial root zone drying method of irrigation: A review; Irrigation and Drainage Vol 71, Issue 3, Wileyonlinelibrary.com/journal/ird, https://doi.org/10.1002/ird.2686 : 1-15 (NAAS 7.20)
	Bhandari B N, Shrivastava, P. K. , Dileswar Nayak and Patel D.P. Detection of land use changes in micro watersheds through RS & GIS, The Pharma Innovation Journal, SP – 11(2) : 949-953 (NAAS 5.23)
2021	Dwivedi, D.K. and Shrivastava, P.K. Assessment of roof water harvesting potential of Navsari city of Gujarat State, India by Remote Sensing and Geographic Information System (GIS), Journal of Applied and Natural Science, Vol 13 (3) : 1143-1150 (NAAS 4.28)
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	Fadadu M.H. and Shrivastava P.K. (2020) Efficacy of drip irrigation on summer sease grown in Narmada district of Gujarat, Journal of Soi and Water Conservation 19(1) : 73-82
	Dabhi,P.V., Lakkad, A.P., Patel, G.R. and Shrivastava P.K. Application of Dual Crop Coefficient Approach for Estimation of Crop Water Requirement for Summer Sesame using SIM DualKc Model, Journal of Agricultural Engineering, Vol. 57(4) : 366-376 (NAAS 4.79)
	Bhandei, B.N., Shrivastava, P.K. , Dileswar Nayak and Patel, D.P. Evaluation of Micro Watersheds of Coastal Navsari, Int. J Curr. Microbiol. App.Sci., Special Issue – 11, 28-43
2019	Shedage Swati, Shrivastava, P. K. and Behara, L. K. Carbon Rich Mangrove Forests: Overview for Stategic Management and Climate Change Mitigation, Advances in Research, Vol 18 (2) : 1-9 (NAAS ##)
	Shedage Swati, Shrivastava, P. K. and Narendra Singh. Influence of Regional Weather Changes on Major Fruit Production and Productivity of Navsari District of Gujarat State, India , Current Journal of Applied Science and Technology, Vol 35 (3) : 1-8 (NAAS 5.32)
	Dwivedi D K and Shrivastava P. K. Rainfall and runoff estimation of micro watersheds of coastal Navsari, Journal of Soil and Water Conservation, Vol 18 (1) 43-51 (NAAS 5.08)
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	Dwivedi D K and Shrivastava P. K. Time series modeling of monthly temperature and reference evapotranspiration for Navsari (Gujarat), India, Current Journal of Applied Sciences and Technology, 35 (6), Article No CJASt 49570, ISSN : 2457-1024 : 1-13 (NAAS 5.32)
2018	Fadadu, M.H., Shrivastava P.K. and Dwivedi D.K.. Application of Hortons infiltration model for the soil of infiltration models on the soil of Dediapada (Gujarat) , India, Journal of Applied and Natural Science, ANFS, Vol 10 (4) : 1254-1258 (NAAS 4.28)
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	<p>: 1073-1077 (NAAS 4.28)</p> <p>Shedage Swati and Shrivastava P. K. Mangroves for protection of coastal areas from high tides, cyclones and Tsunami, International Journal of Plant & Soil Science, Vol 23(4) : 1 to 11 (NAAS 5.07)</p>
2017	<p>Lakkad, A.P., Dileswar Nayak, Patel G.R. and Shrivastava, P. K. Micro watershed prioritization for effective soil conservation planning of sub watershed, Research in Environment and Life Science, Vol. 10 (3) : 275-279 (NAAS ##)</p> <p>Mali S.C., Swati Shedage and Shrivastava. P.K. Economic evaluation of sugarcane based Agro forestry systems, Journal of Tree Sciences, Vol 36 (1) : 34 -37 (NAAS ##)</p> <p>Lakkad, A.P., Shrivastava, P. K., Sondarva, K.N. and Varma M. G. Estimation of sediment delivery ratio at sub watershed level using ArcSWAT Model, Current Advances in Agricultural Sciences 9 (1) : 29-35 (NAAS 5.12)</p> <p>Dileswar Nayak, Surve Nilam and Shrivastava, P.K. Land Use Land Cover Changes Using Remote Sensing and GIS Technique: A Case Study of Navsari District, Gujarat, Journal of Tree Sciences, Vol 36 (2) : 20 to 27 (NAAS **)</p>
2016	<p>Nayak, D., Thakare H.S., Shrivastava, P.K. and Patel, D.P. Irrigation Scheduling of Teak (<i>Tectona grandis</i>) Seedling at Nursery Stage, Journal of Tree Sciences Vol 35, No 2 :54 -57. (NAAS ##)</p>
2015	<p>Patel Darshana, Shrivastava, P.K. and Patel, D.P. Economic solution to remove microbes from harvested roof water, Ecology Environment and Conservation 20 (Suppl) : S143- S148 (NAAS 5.41)</p> <p>Nayak Dileswar, Patel, D.P., Thakare H.S., Satashiya, K. and Shrivastava, P.K. Evaluation of air pollution tolerance index of trees, Research in Environment and Life Sciences, Vol 8 (1) : 7 – 10 (NAAS ##)</p> <p>Bardhan K., Patel D.P., Thakare H.S. and Shrivastava P. K. Influence of Different Temperature Regimes on Growth and Yield of Rice, International Journal of Agriculture Sciences, Volume 7, Issue 4, : 502-509 (NAAS 4.58)</p> <p>Surve Nilam Vijay, Shrivastava, P. K., Dileswar Nayaj and Sarika Wandre. Physiographic Characterization of Micro Watershed: A Case Study of NAU Campus, Indian Forester 141 (9) :951-955 (NAAS 5.10)</p> <p>Lakkad, A.P., Sharma, G.R., Singh Vijay and Shrivastava, P. K. Cadastral level agricultural resources planning through remote sensing and GIS techniques, Indian Journal of Soil Conservation, Vol. 43 (3) : 243 - 249 (NAAS 5.28)</p> <p>Shrivastava, P.K., Surendra Kumar and Narendra Singh. Evaluation of Benefits from Harvested Rain Water in Farm Ponds, Indian Journal of Soil Conservation, Vol. 43 (3) : 271 - 276 (NAAS 5.28)</p>
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2013	Patel Darshana, Shrivastava, P. K. , and Patel D. P. Study on Noise pollution in Navsari city of South Gujarat, Journal of Environmental Research and Development, Vol. 8 (2) : 291 – 298 (NAAS ##)
	Tripathi, Sonal, Patel, H. M., Shrivastava P. K. , and Bafna A. M. Assessment of water quality index of bore well water, some selected locations of South Gujarat, J. of Environmental Science & Engineering. 55 (4) : 456-465 (NAAS ##)
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2010	Shrivastava P. K. , Patel B. N. and Patel, S. N. Pitcher irrigation for young mango plantation in water scarce hilly tracts of South Gujarat, Indian J. Hort. 67 (Special Issue), November 2010: 436-438 (NAAS 6.16)
2009	Shrivastava, P. K. , Navadia, L. J. and Patel, B. N. Feasibility study on rabi onion grown in kyari lands using mini sprinklers, Crop Research, Vol 37 (1, 2 & 3) : 119-123 (NAAS 4.41)
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2006	Shrivastava, P. K. , Navadia, L. J. and Patel, B. N. Fertigation in onion using mini sprinklers, Paper published in Proceedings of 19 th National Convention of Agricultural Engineers & National Seminar on Role of Information Technology in Hi – Tech Agriculture and Horticulture, Organized by Agricultural Engineering Division Board of The Institution of Engineers (India): 162 – 170 (NAAS ##)
2005	Shrivastava, P. K. , Mallik M and Patel U. N. and Rao T.R. Experimental Agromet Advisory

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2001	<p>Shrivastava, P. K. Water crisis – a case study of Jabalpur, Down to Earth, May 31st Vol 10(1) : p50 (NAAS ##)</p> <p>Raman, S., Ahlavat, R.P.S., Shrivastava, P.K., Patil, R.G., and Patel, R.B. Water resources and Agricultural water demand management in Gujarat, Souvenir of State level workshop in capacity building organized by Acharya N G Ranga Agricultural University and ILRI, Wageningen, from 28th Nov. to 30th Nov 30 2001, at Hyderabad: 70 – 93 (NAAS ##)</p> <p>Shrivastava, P.K. and Ghanshyam Das A laboratory model for rainfall – runoff – sediment yield relationships, Indian Journal of Soil Conservation, Vol 29(2) ; 118 - 125 (NAAS 5.28)</p> <p>Patel, B. R. and Shrivastava, P. K. Water management system in the Netherlands, Agricultural Engineering Today, Vol 25 (1-2) : 19-26 (NAAS 4.23)</p> <p>Patel, B. R. and Shrivastava, P. K. Effect of subsurface drainage on the growth of mango plants in waterlogged soil, Agricultural Engineering Today, Vol 25 (3-4) : 41-46 (NAAS 4.23)</p> <p>Shrivastava, P. K. and Raman S. Diagnosis of irrigation system at Segwa drainage pilot area. 1st Asian Regional Conference, Seoul, Korea, 16th to 21st September 2001: p 2 (NAAS ##)</p>
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1996	Parikh, M.M., Shrivastava, P.K. , Savani ,N.G. and Raman, S. Hydraulic characteristics of emitters and microtubes, All India Seminar on Modern Irrigation Techniques, 26-27th June organized by Institute of Engineers (Agric.Engg.Div.) Held at Bangalore: p.242-250. (NAAS ##)
1995	Parikh, M.M., Savani, N.G., Shrivastava, P.K. , Holer, G.H., Shah, G.B., and Raman, S. Nitrogen economy in banana through fertigation. Paper presented in International Symposium on fertigation held at Israel Institute of Technology Haifa, Israel. (NAAS ##)
1994	Shrivastava, P.K. , Parikh, M.M., Savani, N.G. and Raman, S. Effect of drip irrigation and mulching on tomato yield, Agricultural Water Management, Elsevier Sciences, Vol 25 (2) : p 179 - 184. (NAAS 10.02)
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1993	Parikh, M.M., Shrivastava, P.K. , Savani, N.G. and Raman, S. Feasibility of drip in Sugarcane, National Workshop on sprinkler and drip irrigation systems, INCID, New Delhi: p 124-127. (NAAS ##)
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II Bulletin / Report:

2022	<p>Shrivastava, P. K., Dileswar Nayak, Patel, J. M., Patel, K.G., Nirav Pampaniya and Sanjay Arora, Souvenir, the 31st National Conference on “Innovative resource management approaches for coastal and inland ecosystems to sustain productivity and climate resilience”, at NAU, Navsari October 13 to 15, 2022, University Publication No.: NAU/02/04/037/2022: 258 p</p> <p>Patel, J. M., Patel, K.G., Nirav Pampaniya, Shrivastava, P. K., Dileswar Nayak and Sanjay Arora, Book of Abstracts, the 31st National Conference on “Innovative Resource Management Approaches for Coastal and Inland Ecosystems to Sustain Productivity and Climate Resilience”, held at NAU, Navsari, October 13 to 15, 2022, University Publication No.: NAU/02/04/036/2022 : 241 p.</p> <p>Shrivastava, P. K., Dileswar Nayak, Patel, J. M., Patel, K.G., Nirav Pampaniya and Sanjay Arora, Proceedings, the 31st National Conference on “Innovative resource management approaches for coastal and inland ecosystems to sustain productivity and climate resilience”, at NAU, Navsari October 13 to 15, 2022.: 61 p</p>
2020	Shrivastava, P.K., Dileswar Nayak, Patel D.P., Dwivedi, D.K. and Bhandari B.N. Status Report on Demonstration of Site Specific Water Conservation Technologies for Improving Deteriorating Soil and Water Quality in the Coastal South Gujarat, DST, GOI : 73p
2018	Shrivastava, P. K. and Swati Shedage. Forestry for Ameliorating Farmers Income and Environmental Security, Navsari Agricultural University, NAU Publication No 12/2018-19.; 30 p
2013	<p>Shrivastava, P. K. and Sarika Santu Wandre. Design and Planning of Rain Water Harvesting Structures for University Farms at Bharuch, Department of Natural Resource Management, ASPEE College of Horticulture & Forestry, Navsari Agricultural University, Navsari : 39 p</p> <p>Shrivastava, P. K. and Sarika Santu Wandre. Design and Planning of Farm Pond for Tanchha Research Station, Department of Natural Resource Management, ASPEE College of Horticulture & Forestry, Navsari Agricultural University, Navsari : 10 p</p>
2012	Vyas H U and Shrivastava, P. K. Comprehensive District Agriculture Plan (C-DAP), District Surat, Department of Agriculture & Cooperation, GOG, Gandhinagar : 197 p
2010	Dileswar Nayak and Shrivastava, P. K. Status Report of Establishment of Center on Environmental Studies, Dept. NRM, ASPEE College of Horticulture & Forestry, NAU, Navsari: 37 p
2004	Shrivastava, P. K. , Patel, B. N. and Patel, S. N. Research Abstracts of Water Management Water Management Project, Agriculture Experimental Station, Navsari Agricultural University, Paria, Ta. – Pardi, Dist. Valsad :10 p
2002	Mallick, M., Shrivastava, P. K. and Patel, U. N. Annual Report of Experimental Agrometeorology Advisory Service : p
2001	<p>Shrivastava, P. K., Patel, B. R. and Raman, S. Drainage Design for Ukai Right Bank Canal Command Indo Dutch Network Project, Gujarat Agricultural University, Navsari; SWMP, IDNP,Tech, Bull 15, 30 p</p> <p>Shrivastava, P. K., Patel, B.R., Makvana, G.K. and Raman, S. Report on Inventory of existing irrigation system at Sisodara Pilot Area, Indo Dutch Network Project, Gujarat Agricultural University, Navsari; SWM IDNP Tech. Rep. 5: 7 p</p>

	Patel,B.R., Shrivastava, P. K. and Raman, S. Report on Conveyance Losses Study, Indo Dutch Network Project, Gujarat Agricultural University, Navsari; SWM IDNP Tech. Rep. 6: 12 p
	Shrivastava, P. K. , Patel, B. R., Makvana, G. K., and Raman, S. Drip Irrigation in Sugarcane, Gujarat Agricultural University, Navsari; SWM IDNP Tech. Rep. 7: 17 p
	Shrivastava, P. K. , A. M. Patel, and S Raman. Salt and Water Balance Study at Segwa Pilot Area, Gujarat Agricultural University, Navsari; SWM IDNP Tech. Rep. 8: 21 p
	Shrivastava, P. K. , Patel, B. R., Makvana, G. K., and Raman S. Well Irrigation in Sugarcane, A Case Study of Segwa Pilot Area, Gujarat Agricultural University, Navsari; SWM IDNP Tech. Rep. 9: 5 p
	Shrivastava, P. K. and S Raman. District – wise Crop and Domestic Water Demands of Gujarat, Gujarat Agricultural University, Navsari;SWM IDNP Tech. Bull. 18 : 65 p
1999	Parikh,M. M., Lad, A. N., Shrivastava, P. K. , Patel, A.M. and Raman,S. Pre-Drainage Investigations In Segwa Pilot Area, Indo Dutch Network Project, Gujarat Agricultural University, Navsari; SWMP, IDNP,Tech, Rep 1, 42 p
	Shrivastava, P. K. , Parikh, M.M., and Raman, S. Diagnosis of Existing Irrigation System in Segwa Pilot Area, Indo Dutch Network Project, Gujarat Agricultural University, Navsari; SWMP, IDNP,Tech, Rep 2, 32 p
	Parikh, M.M., Shrivastava, P. K. , Lad, A.N., and Raman, S. Drainage System Design, Indo Dutch Network Project, Gujarat Agricultural University, Navsari; SWM, Tech, Bull 12, 45 p
1998	Parikh, M.M., Shrivastava, P. K. , Savani, N.G., Parekh, D.P. and Raman, S. Climatologic and crop stage-based drip irrigation schedules for major crops of Gujarat, Soil and Water Management Bulletin No 5, GAU Navsari, 41 p
	Awadariya ,J.D., Parekh, D.P., Shrivastava, P. K. , Lad, A.N., and Raman, S. Introduction to computers and its usage in the field of soil and water management, Soil and Water Management Bulletin No 7, GAU Navsari, 41 p

III Post Graduate Thesis Guided

2023	Sonawane Ashish Vasant, Deficit and partial root zone irrigation in irrigated moringa olifera, Thesis of Ph.D. (Ag. Engg) with specialization in Irrigation and Drainage, submitted to College of Agricultural Engineering & Technology, Dediapada, NAU, Navsari, 156 p
2021	Haripriya S : Feasibility of <i>Schizostachyum Pergracile</i> (Munro) in Gravity Drip Irrigation in Water Scarce Forested Watersheds of South Gujarat, Thesis of M.Sc. (Forestry) with specialization in Watershed Management, submitted to College of Horticulture & Forestry, NAU, Navsari, 80 p
2019	Fadadu Mayank Harsukhlal : Efficacy of drip irrigation on summer sesame grown in Narmada district of Gujarat, Thesis of M.Tech. (Ag. Engg.) with specialization in Soil & Water Engineering, submitted to the College of Agricultural Engineering & Technology, NAU, Dediapada, NAU, Navsari, 136 p
2018	Jagani Axay H: Efficacy of Drip irrigation on <i>Melia composita</i> Willd. (Malabar Neem), Thesis of M.Tech. (Ag. Engg.) with specialization in Soil & Water Engineering, submitted to the College of Agricultural Engineering & Technology, NAU, Dediapada, NAU, Navsari, 108 p
2016	Patel Rahul M: Evaluation of micro watersheds of Navsari Taluka, Thesis of M.Sc. (Forestry) with specialization in Watershed Management, submitted to College of Horticulture & Forestry, NAU, Navsari,, 84 p

2016	Bhanderi Bhavin N : Study of coastal micro watersheds near Dandi, Thesis of M.Sc. (Forestry) with specialization in Watershed Management, submitted to College of Horticulture & Forestry, NAU, Navsari, 94 p
2016	Lakkad Arun Popatbhai : Estimation of Soil Loss and Prioritization of Watershed Using RUSLE and MUSLE Models Through Remote Sensing and Geographical Information System, Thesis of Ph. D. (Agril. Engg.) in the subject of Soil and Water Engineering, submitted to N M College of Agriculture, NAU, Navsari: 191 p
2013	Surve Nilam Vijay: Evaluation of changes in micro watersheds of NAU campus during last decade, Thesis of M.Sc. (Forestry) with specialization in Watershed Management, submitted to College of Horticulture & Forestry, NAU, Navsari, 85 p
2012	Surendra Kumar: Evaluation of farm pond constructed in campus watershed, Thesis of M.Sc. (Forestry) with specialization in Watershed Management submitted to College of Horticulture & Forestry, NAU, Navsari, 95 p

Thesis submitted to fulfill degree requirements:

1996	<p>Shrivastava, P.K.: Design and Development of a laboratory model for studies on rainfall-runoff-sediment yield relationship, Ph.D. Thesis, G.B.Pant Univ. of Agric. and Tech., Pantnagar. 119 p.</p> <p>Abstract:</p> <p>In the study an attempt has been made to design, develop and calibrate a runoff plot system, fitted with a rainfall system over it, which can create desired slopes, runoff pattern, measure runoff, wash load and bed load components of sediment yield, desired raindrop sizes, uniformity of distribution rainfall, rainfall intensities and velocities of fall of raindrop which commensurate with natural rainfall characteristics. New hydrologic and analytic relationships are generally recommended to be tested for their feasibility under controlled laboratory conditions and then applied on the field to reduce requirements of time and cost of the model verification and application of new hydrologic and mathematical relationships.</p> <p>Soil loss and sediment yield models have generally been developed on runoff plots which were laid out in the field, and experiments were carried out over a large period of time. As per the reported literature, runoff plots with controlled rainfall systems which can produce rainfall close to natural conditions, and also with facilities to vary the parameters of the runoff plot have not been developed. An attempt has been made in this study to design and develop a laboratory model which incorporates most of these systems. The model consists of a channel section (4.0 m * 1.0 m) with a tilting mechanism and a runoff collection tray (0.5 m * 0.5 m). It is also provided with a sediment measurement box (20 cm * 30 cm * 30 cm), a runoff collection tray (50 cm * 50 cm * 75 cm), and a splash erosion measuring system. The rainfall system is fixed over the runoff plot by using a micro tube drip system, the water spray which strikes a MS plate and drops back in the form of rain drops, which is very similar to natural rainfall.</p> <p>The model was calibrated for the tilting mechanism of runoff plot and the rainfall parameters, such as, rainfall intensity, uniformity of distribution, drop size and velocity of fall. A linear relationship has been developed between number of visible threads and slopes of runoff plot to create the desired slope. The relationship gave a coefficient of regression of 0.99 which is acceptable. To create required rainfall intensities, rain drop sizes and coefficient of uniformities of rainfall, relationships were developed as a function of the combination of input water pressure, orifice diameter of emitters and spacing of laterals.</p> <p>The rainfall intensities that were observed to be below 16 cm/hr in the lab-model were selected for the study, as this size of rainfall has been reported to occur at a 100 yrs recurrence interval in the north-western India. The coefficient of uniformity of rainfall obtained was above 70 percent</p>
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	<p>which is acceptable as per Christiansen (1942). The size of raindrops which were created by the model were found to be less than 4 mm in diameter. This is the size of raindrops that is generally found under natural conditions (Subramanya, 1994). The velocity of fall was calibrated by adopting the Park's equation (1983). A relationship was developed between the drop size and the rainfall intensity which was found to be exponential in nature.</p> <p>To validate the capabilities of the lab-model, seven sets of experiments were conducted; Six sets on six number of popular sediment yield models and one on evaluation of mulches. The models tested consisted of wash load models with rainfall as the input (Wischmeier and Smith, 1965; and Elwell, 1978), washload models with runoff as the input (William's, 1975), bed load models of DuBoy (1979) and Schoklitsch (1950) with rainfall as the input. These models were put on test on the lab-model and their results were compared with measured data. Experiments were also conducted to verify the applicability of the lab-model to conduct experiments on soil erosion due to raindrop splash and effectiveness of mulches to check soil erosion. In all the cases, the results obtained compared well with the measured data which proved laboratory model is capable of conducting experiments on hydrologic models' rainfall-runoff-sediment yield relationships.</p>
1988	<p>Shrivastava,P.K. : Crop water production function and optimal irrigation programme for wheat, M.Tech. Thesis, J.N.K.V.V., Jabalpur. 74 p.</p> <p>Abstract: Crop water production functions are mathematical tools to aid in deciding policies for optimal water use. Development of the production function requires information on seasonal, stage wise water use evapo-transpiration and their influence on yield. Field studies were conducted with line-source sprinkler to obtain varying application depths and on resultant crop yield of wheat at the Central Soil Salinity Research Institute, Karnal. Available data on the effect of different irrigation schedules on crop yield were analyzed to obtain stage-wise evapo-transpiration. The irrigation scheduling strategy was based on giving or missing irrigation at different stages of crop growth. In order to be able to predict evapo-transpiration (ET) from available models that are based on different Climatological approaches, values of ET were calculated by Blaney-Criddle method, Modified Penman method, Pan method and Radiation method. The calculated ET values were compared with observed values. Simplex method was used for allocating the area and deciding the number of irrigations in particular stages so as to maximize yield from limited available water. From the studies it was concluded that linear or stewart type production function could be very well used to develop crop-water production function with seasonal ET. It was also concluded that stewart type additive crop- production function could be used to develop stage-wise crop- water-production function. From the analysis it was found that Blaney-Criddle and Radiation methods predicted values of ET closer to the observed value as compared to Modified Penman and Pan methods. It is recommended that the procedure suggested for deciding optimal irrigation programmes could be adopted to other areas provided Climatological, hydrologic and soil parameters are known. It was evident from the experiments that line source sprinklers could be used to generate data on stage-wise crop evapo-transpiration.</p>
1986	<p>Shrivastava,P.K. and Pandey, T. : Testing and evaluation of manual seed cum fertilizer drill, B.Tech. Thesis, J.N.K.V.V., Jabalpur.60 p.</p> <p>Abstract: Manual drawn seed cum fertilizer drill and manual seed drill was rested and evaluated as part of under graduate research work. The metering device used in manual seed cum fertilizer drill was diamond shaped orifice type and that in manual seed drill was manual. It was found that seed and fertilizer metering mechanism worked satisfactorily and was easy to operate and fabricate locally. The depth of sowing was 6.08 cm and 5.24 cm in manual seed cum fertilizer drill and manual seed drill respectively, the angle of hitch provided in both the seed drills enabled sowing at different depths, however, the seed covering in manual seed drill was not satisfactory. The rate of fertilizer application was 118 kg/ha and 102 kg/ha and field efficiency 72.61 % and 82.17 % respectively in</p>

	manual seed cum fertilizer drill and manual seed drill. The area covered in 8 sowing days per person working for 8 hrs was 2.38 ha and 2.88 ha by manual seed cum fertilizer drill and manual seed drill respectively. These seed drill could be successfully adopted for line sowing of crops by marginal farmers under plane land cultivation as well as in bench terraces in hilly tracts.
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IV Book Chapter

2022	Sinha Satish Kumar, Abhishek Mehta, Laxmikant Behra and Shrivastava P. K. Influence of Climate on the radial growth of Teak (<i>Tectona grandis</i> Linn.f) in peninsular India.
2021	Lakkad A.P. and Shrivastava, P.K. Use of ArcGIS Interface for Preparation of Erosion Susceptibility Map of Dhaman Khadi Sub- watershed in Western India. Book on “Managing Land Degradation for Enhancing Farm Productivity” Edited by P.R.Bhatnagar, D Dinesh, Vijaysinha Kakade, V C Pande and Omprakash Meena, International Books & Periodical Supply Service, Delhi : 49 - 70
	Shedage Swati, Shrivastava P.K. and Surve Nilam. Mangroves for Protection of Coastal Areas from High Tides, Cyclone and Tsunami, Book on “Managing Land Degradation for Enhancing Farm Productivity” Edited by P.R.Bhatnagar, D Dinesh, Vijaysinha Kakade, V C Pande and Omprakash Meena, International Books & Periodical Supply Service, Delhi : 249 - 264
2017	Patel, R.M., Shrivastava, P.K. , Dileswar Nayak and Patel, D.P. Evaluation of micro watersheds of Navsari, Book on Natural Resource Management for Climate Smart Agriculture edited by Sanjay Arora Sanjay Swami and Suraj Bhan, Soil Conservation Society of India New Delhi : 343 - 352
2016	Shrivastava, P.K. Water Recycling and Management in Urban Areas, Handbook of Urban and Periurban Horticulture, Edited by N L Patel, T R Ahlawat and Alka Singh, Ambica Book Agency, Jaipur, Rajasthan, ISBN : 81-87118-07-5: p 220 -229

VI. Popular Articles Published:

2023	Shrivastava P. K. , Summary of the 31st National Conference held at Navsari Agricultural University, Soil and Water Conservation Today, Vol 19, No 1, 4-6
2022	Shrivastava P. K. Newly formed Gujarat Chapter of Soil Conservation Society of India, Soil and Water Conservation Today, Vol 17, No 2, 5-6
	Sinha Satish Kumar, Laxmikant Behra, Abhishek Mehta and Shrivastava P. K. Dendroclimatological Investigation of Teak (<i>Tectona grandis</i> f) in South Gujarat, Wood is good, Teak, Vol. 3, Issue 1, April – June, Publication of Institute of Wood Science and Technology, Indian Council of Forestry Research and Education : 115-118
2019	Madhuri Sukhadiya, Dholariya C.A., Behera, L.K., Mehta, A.A., Shrivastava, P.K. and Patel, S.M. (2019) Prospective of lesser known tree species : Malabar orchid (<i>Bahunia malabarica</i> Roxb.), Van Sangyan (ISSN 2395 – 468X), Vol 6, No. 4 : 12-14
2016	Prjapati, V.M., Shrivastava, P.K. , Jha, S.K., Hegade, H.T. and Shankanoor, M.S. (2016) <i>Tunk samay man vadhu vadtar aptu vraksha Neelgeri</i> , Krishi Jeevan, June 2016, Vol 572,:

	p 7-9.
2014	Shrivastava, P.K. , Patel D.P., Patel Darshana C and Satasiya K. F. (2014) <i>Varsati pani no sangrahan</i> , Folder, NRM, ACHF, NAU, Navsari : 6 p
2008	Shrivastava, P.K. and Patel, Pankaj (2008) <i>Drip nu rundhavu karan ane upaya</i> (Gujarati), Krishi Prasad Vol 1 : p 48 - 52.
2002	Shrivastava, P. K. and Patel, B. R. (2002) <i>Gujarat krishi kshetra pragati mate krishi engineerie ne agrimata apo</i> (Gujarati) Gujarat Kisan Vol 3 (11) : 27-28 Patel, B. R., Shrivastava, P. K. and Raman, S. (2002) <i>Dhanya, kathonda ane talebiyan pako mate ne piyat bhalamando</i> (Gujarati) Gujarat Kisan Vol 3 (11) : 17-18
2001	Patel, B.R., Solia, B.M. and Shrivastava, P.K. (2001) <i>Swadeshi tapak</i> (Micro tube) <i>piyat padhati</i> (Gujarati), Narmada Kisan Parivar Patra, Vol 17(6): 16-17, 20.
2000	Patel, B. R., Shrivastava, P. K. and Raman, S. (2000) <i>Dhanya, kathonda ane talebiyan pako mate ne piyat bhalamando</i> (Gujarati) Gujarat Kisan Vol 2 (13) : 16-17 Patel, B. R. Shrivastava, P. K. and Patel, K. (2000) <i>Krshi kshetre pani no durvyaya ane jamen bachavo</i> (Gujarati) Gujarat Kisan Vol 2 (13) : 14-15
1999	Patel, B.R., Patel, K. and Shrivastava, P.K. (1999) <i>Tatkalik krishi utpadan vadharva matena agtyana upayo</i> (Gujarati), Narmada Kisan Parivar Patra, Vol 15(7): 18-20. Patel, B.R., Shrivastava, P.K. and Patel, K. (1999) <i>Bharat man badlata mausam ane krishi utpadan man tathi teni asar</i> (Gujarati), Vavetar Vol 1(7-9): 29-31. Patel, B.R., Shrivastava, P.K. and Patel, K. (1999) <i>Water Management ne safadta matene guruchavio</i> (Gujarati), Vavetar Vol 2 (1): 33 - 35.
1998	Shrivastava, P.K. and Patel, Pankaj (1998) <i>Drip nu rundhavu karan ane upaya</i> (Gujarati), Agrotech Vol 2 (3) : p 42 - 45.
1992	Savani, N.G., Shrivastava, P.K. , Parikh, M.M. and Raman, S. (1992) <i>Ksharyukt parshitiman drip padhatino upyog</i> (Gujarati), Krishi Jeevan, Vol 24(9) : p 14-16.
1990	Shrivastava, P.K. , Savani, N.G., Parikh, M.M. and Raman, S. (1990) <i>Krushhi kshetraman plastic no viddha upyog</i> (Gujarati), Krishi Govidya Vol. 43(7) : p 9-12.

VII Oral Presentations

2023	Shrivastava, P. K. , D. K. Dwivedi, Dileswar Nayak, D. P. Patel and B. N. Bhandari, Evaluation of Rainwater Recharging and Harvesting Systems, Case studies of Vidyakunj school of Navsari city, Vinay Mandir school of Dandi village and residential areas of Navsari city in Gujarat, presented in the 5th International Conference on “Sustainable Natural Resource Management under Global Climate Change” organized by Soil Conservation Society of India from Nov. 7 -10, 2023, at NASC Complex, New Delhi, The
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	<p>Book of Abstracts, TS1ORL03 : 7 p</p> <p>Nilam Surve, P K Shrivastava, M B Tandel and Dileswar Naik. Feasibility of Conocarpus erectus (Button wood) along the Coastal South Gujarat, 5th International Conference on “Sustainable Natural Resource Management under Global Climate Change” organized by Soil Conservation Society of India from Nov. 7 -10, 2023, at NASC Complex, New Delhi, The Book of Abstracts, TS4POS09 : 241 p</p> <p>Sonawane A.V. and Shrivastava P.K. Response of Moringa Oleifera to partial rootzone drying irrigation and regulated deficit irrigation. 5th International Conference on “Sustainable Natural Resource Management under Global Climate Change” organized by Soil Conservation Society of India from Nov. 7 -10, 2023, at NASC Complex, New Delhi, The Book of Abstracts, TS6POS13 : 323 p</p> <p>Shrivastava P. K., Shah N. M., and Tandel B. M., Study to determine the efficacy of Dip irrigation on Dragon (Kamlam) fruit in the 5th International Conference on “Sustainable Natural Resource Management under Global Climate Change” organized by Soil Conservation Society of India from Nov. 7 -10, 2023, at NASC Complex, New Delhi, The Book of Abstracts, TS6ORL19 : 332 p</p> <p>Rishi Ram Paudel and P K Shrivastava. Current land use pattern on the basis of Agro Ecological region of Nepal, in the 5th International Conference on “Sustainable Natural Resource Management under Global Climate Change” organized by Soil Conservation Society of India from Nov. 7 -10, 2023, at NASC Complex, New Delhi, The Book of Abstracts, TS6ORL25 : 339 p</p> <p>Nirav Pampaniya, Dileswar Naik and Shrivastava P.K. Estimation of evapotranspiration and land surface temperature of different land uses in Unai watershed using MODIS Satellite data, organized by Soil Conservation Society of India from Nov. 7 -10, 2023, at NASC Complex, New Delhi, The Book of Abstracts, TS6POS05 : 362 p</p>
2019	<p>Shrivastava, P. K., Nayak, D., Patel, D. P., Viyol, S. V., Thakare, H. S. and Dwivedi, D. K. Integrated Rainwater Resource Management (iRaM) model for coastal South Gujarat. International Conference on Soil and Water Resources Management for Climate Smart Agriculture, Global Food and Livelihood Security, New Delhi, 5-9 November.</p> <p>Shedage, S. and Shrivastava, P. K. An overview of Mangroves for protection of coastal areas. International Conference on Soil and Water Resources Management for Climate Smart Agriculture, Global Food and Livelihood Security, New Delhi, 5-9 November.</p> <p>Shrivastava, P. K. and Fadadu, M. H. Efficacy of drip irrigation on summer sesame grown in Narmada district of Gujarat. International Conference on Soil and Water Resources Management for Climate Smart Agriculture, Global Food and Livelihood Security, New Delhi, 5-9 November.</p> <p>Dwivedi D.K., Shrivastava, P. K., Bhanderi B N. and Nayak D. Estimation of roof water harvesting potential using Remote Sensing and GIS in Onjal, Machhad and Dandi village of Navsari District. International Conference on Soil and Water Resources Management for Climate Smart Agriculture, Global Food and Livelihood Security, New Delhi, 5-9 November.</p> <p>Surve, N and Shrivastava, P. K. Estimation of runoff using rational method in Navsari Agricultural University campus. International Conference on Soil and Water Resources Management for Climate Smart Agriculture, Global Food and Livelihood Security, New Delhi, 5-9 November.</p> <p>Bhanderi B.N. and Shrivastava P K. Water conservation and reuse in India. Third International Conference on Global Initiatives in Agricultural and Applied Sciences for Eco friendly Environment (GIASE – 2019) during June 16-18, 2019 at Tribhuvan University, Kathmandu, Nepal</p>
2018	<p>Jagani, A. H., Shrivastava, P. K., Lakkad, A.P., Thakur, N. S., and Dwivedi, D. K. Efficacy</p>

	<p>of Drip irrigation on Melia composita Willd. (Malabar Neem), Proceedings of 27th National Seminar on Sustainable Management of Soil and Water Resources for Doubling Farmers Income, from Oct. 25 – 27, 2018, Organized by Soil Conservation Society of India in collaboration with Assam Agricultural University, Jorhat : 169</p> <p>Dwivedi, D. K. and Shrivastava, P. K. Rainfall and runoff estimation of micro watersheds of coastal Navsari, Proceedings of 27th National Seminar on Sustainable Management of Soil and Water Resources for Doubling Farmers Income, from Oct. 25 – 27, 2018, Organized by Soil Conservation Society of India in collaboration with Assam Agricultural University, Jorhat : 72</p> <p>Bhanderi, B. N., Shrivastava, P. K., Nayak Dileswar and Dwivedi, D. K. Evaluation of micro watersheds of coastal Navsari, Proceedings of 27th National Seminar on Sustainable Management of Soil and Water Resources for Doubling Farmers Income, from Oct. 25 – 27, 2018, Organized by Soil Conservation Society of India in collaboration with Assam Agricultural University, Jorhat : 166</p>
2017	<p>Patel, R.M., Shrivastava, P.K., Dileswar Nayak and Patel, D.P. Evaluation of micro watersheds of Navsari, Proceedings of 26th National Seminar on Natural Resource Management for Climate Smart Agriculture from Sep. 11-13, 2017, Organized by Soil Conservation Society of India in collaboration with Central Agricultural University, Imphal (Manipur) & College of Post Graduate Studies, CAU (I), Barapani, Sillong (Meghalay) : 147</p> <p>Surve Nilam, Shrivastava, P.K. and Dileswar Nayak. Land Use land Cover classification, of NAU campus using remote sensing and GIS, Proceedings of National Seminar on Application of Remote Sensing and GIS in Indian Scenario with special reference to agriculture and forestry, UAS, Dharwad, Sep. 15-16, 2017. Organized by College of Forestry, Sirsi in collaboration with Indian Space Research Organization (ISRO), Bengaluru : 171-173</p>
2016	<p>Singh Narendra, Pathak Jayesh, Shrivastava, P.K. and Leua A.K. Production and economic analysis of Palmyra Palm, National Conference on Palmyra Palm held on Jan, 7-8, 2016 at NAU, Navsari, Souvenir : 137-141</p> <p>Singh Narendra, Sharma, O.P., Shrivastava, P.K. and Leua A.K. Economic impact of climate change on agro forestry and its mitigation strategies Compendium of Abstracts of NAU-ISTS National Seminar on Forest and tree based land use system for livelihood, nutritional and environment and environmental security, held during Dec. 21-23, 2016 at NAU, Navsari, NAU-ISTS-4/180 : 89-90</p> <p>Dileswar Nayak, Nilam Surve and Shrivastava, P.K. Land use land cover change using remote sensing and GIS technique : a case study of Navsari district, Gujarat, Compendium of Abstracts of NAU-ISTS National Seminar on Forest and tree based land use system for livelihood, nutritional and environment and environmental security, held during Dec. 21-23, 2016 at NAU, Navsari, NAU-ISTS-4/218 : 93</p> <p>Nayak, M.R., Behra, L.K., Patel, D.P., Shrivastava, P.K., Patel, S.M. and Dholariya C.A JFM, A tool for ecosystem conservation and sustainable utilization of forest resources in India, Compendium of Abstracts of NAU-ISTS National Seminar on Forest and tree based land use system for livelihood, nutritional and environment and environmental security, held during Dec. 21-23, 2016 at NAU, Navsari, NAU-ISTS-4/278 : 95</p> <p>Sharma Vineet Kumar and Shrivastava, P.K. Scope and importance of mechanization in agro forestry, Compendium of Abstracts of NAU-ISTS National Seminar on Forest and tree based land use system for livelihood, nutritional and environment and environmental security, held during Dec. 21-23, 2016 at NAU, Navsari, NAU-ISTS-4/240 : 118</p>

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2015	<p>Shrivastava, P.K., D.P.Patel, K. F. Satasiya and D. C. Patel. Harvesting Roof Water to Tackle Water Crisis in Tribal Areas, International Conference on “Natural Resource Management for Food Security and Rural Livelihoods” at New Delhi, February 10-13, 2015, : 150</p> <p>Shrivastava, P.K., Surendra Kumar, Narendra Singh and Shah N. M. Evaluation of Benefits from Harvested Rain Water in a Farm Pond, Paper presented in International Conference on “Natural Resource Management for Food Security and Rural Livelihoods” at New Delhi, February 10-13, 2015, : 151</p> <p>Lakkad, A. P., G. R. Sharma, Vijay Singh and Shrivastava P. K. Cadastral Level Agricultural Resources Planning Through Remote Sensing and GIS Techniques, Poster presented in International Conference on “Natural Resource Management for Food Security and Rural Livelihoods” at New Delhi, February 10-13, 2015, : 453</p>
2013	<p>Sarika Santu Wandre, Nilam Vijay Surve, Dileshwar Naik and Shrivastava, P.K. Remote Sensing and GIS in Horticulture: Opportunities and Challenges, Organized at NAU Navsari from Jan. 9-11, 2013</p> <p>Shrivastava P. K., A. M. Patel and D P Patel. Rain Water Harvesting in Navsari Agricultural University Campus – a case Study, 47th Annual Convention of ISAE and International Symposium on “Bio Energy – Challenges and Opportunities”, Jan. 28 – 30, 2013, Hyderabad</p> <p>Shrivastava, P.K. Environmental Status of Navsari – A perspective, Presentation in one day workshop on “Urban Environmental Governance – A Vision for Navsari & Vijalpore” at NAU Navsari in collaboration with University of Lausanne.</p>
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2011	<p>Darshana Patel and Shrivastava P.K. Study on Noise pollution in Navsari city of South Gujarat, 4th International Conference of Environmental Research, Organized at Sardar</p>

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2007	Shrivastava, P. K., Navadia, L. J. and Patel, B. N. Feasibility study on <i>rabi</i> onion grown in <i>kyari</i> lands using mini sprinklers, Paper presented in XLI (41 st) ISAE Annual Convention at JAU, Junagadh from 28 th to 31 st Jan. 2007 :
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2006	Shrivastava, P. K., Navadia, L. J. and Patel, B. N. Fertigation in onion using mini sprinklers, Paper published in Proceedings of 19 th National Convention of Agricultural Engineers& National Seminar on Role of Information Technology in Hi – Tech Agriculture and Horticulture, Organized by Agricultural Engineering Division Board of The Institution of Engineers (India): 162 – 170
2005	Shrivastava, P. K., Navadia, L. J. and Patel, B. N. Pitcher irrigation for young mango plants in water scarce hilly tracts of South Gujarat, Paper presented in XXXIX Annual Convention & Symposium of ISAE held at Acharya, N. G. Ranga Agricultural University, Hyderabad from March 9-11th 2005, Souvenir: 139
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2003	Shrivastava, P.K., and Patel B. N. Water Management in Mango (<i>Mangifera indica</i> L) Crop, National Seminar on Mango, Challenges in management of production, postharvest, processing and marketing, Organized by Dept. of Horticulture, College of Agriculture, GAU, Junagadh from June 14-15, 2003
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	Shrivastava, P. K. , Patel, A. M. and Raman, S. Design Specifications for Basin Method of Irrigation Using BASDEV Model , Annual Workshop held at CSSRI Karnal from 1 to 3 rd March 2002
2001	Shrivastava, P. K. Water Crisis, Present and Future – A case study of Jabalpur, Fifteenth National Convention of Agricultural Engineers & National Seminar on Sustainable Development of Agricultural Engineering, Organized by Institution of Engineers, Jabalpur Center from 29-30 th Dec 2001 : p 21
	Shrivastava, P. K. , Vashi, D. R. and Patel, R. B. Soil conservation measures adopted to check erosion, Fifteenth National Convention of Agricultural Engineers & National Seminar on Sustainable Development of Agricultural Engineering, Organized by Institution of Engineers, Jabalpur Center from 29-30 th Dec 2001 : p 38
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1999	Shrivastava, P.K. and Patel, B.R. Role of Agricultural Engineers in increasing the food production in India, Seminar on Role of Agricultural Engineers in Mechanization for Sustainable Agriculture Organized by GAU and Gujarat Chapter of ISAE on 16 th Jan 1999 held at Junagadh, Proceedings : 24-27
1998	Patel, B.R., Parikh, M.M. and Shrivastava, P.K. Feasibility of windmill irrigation in coastal region. Paper presented in National Seminar on Frontiers of Research and its Application in Coastal Agriculture held at Gujarat Agricultural University, Navsari between 16th - 20th Sept. 98.
	Raman, S and Shrivastava, P.K. Water management practices to minimize on farm losses in heavy soils, Paper presented in National Conference on Salinity Management in Agriculture held at CSSRI Karnal 2 – 5 Dec. 1998 : 341 - 348
1992	Parikh, M.M., Shrivastava, P.K. , Savani, N.G., Shah, G.B. and Raman, S. Feasibility of drip and mulches in Banana. Paper presented in Golden Jubilee symposium on Optimization

	of Productivity and utilization of Banana. Indian Soc. of Hort.
1990	Shrivastava, P.K. , Savani, N.G., Parikh, M.M. and Raman, S. Response of tomato to drip and mulches, paper published and presented in seminar on drip irrigation organized by Gujarat Association of Agricultural Sciences (GAAS), Anand :p 142- 148..
	Parikh, M.M., Shrivastava, P.K. , Savani,N.G., Desai, S.G., Malick, M. and Raman, S. Response of banana to drip with mulches, Paper published and presented in seminar on Drip Irrigation organized by GAAS Anand: p 149-154.
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1993	Shrivastava, P.K. , Savani, N.G., Parikh, M.M. and Raman, S. Feasibility of drip fertigation in Banana, Paper presented in XXVIII Annual Convention of ISAE held at Bhopal from 5-7th March, 1993.
1991	Shrivastava, P.K. , Savani, N.G., Parikh, M.M. and Raman, S. Hydraulics and surface horizontal movement under microtube drip system, Paper presented in XXVII Annual Convention of ISAE held at New Delhi from 9-11th Oct. 1991.
1990	Shrivastava, P.K. , Parikh, M.M., and Raman, S. Performance testing of some commercial emitters, Paper presented in XXVI Annual convention of ISAE held at Hissar from Feb. 7-9th 1990.
1989	Shrivastava,P.K. , Pandey,T. and Ray, U. Design and evaluation of manual drawn seed cum fertilizer drill, National Seminar on Role of machineries in Maximizing Agric. and Production, ISAE, Bihar Chapter held at Patna May 15th-16th 1989 : p 195.

Lectures Delivered

2023	Invited lecture on “An Approach to Devise a Sustainable Agro Ecotourism Model” in a Three-day training programme on Agro Tourism from Dec. 11 to 13, 2023 by Extension Education Institute, Anand at KVK, NAU, Navsari
	Invited lecture on “Management of Water Resources through Land Use Planning along the Coastal Central Western India” 5th International Conference on “Sustainable Natural Resource Management under Global Climate Change” organized by Soil Conservation Society of India from Nov. 7 -10, 2023, at NASC Complex, New Delhi
	Lead lecture delivered on “Tackling Issues of Water Resources for Sustainable Agriculture in Coastal South Gujarat” in the National Conference on Transformation of Agro-Technologies for Enhancing Production Under Diverse Agro-Ecosystem organized by College of Agriculture, Waghai and Navsari Chapter of Agronomy, NAU, Navsari from October 12-14, 2023
	Invited Speaker on “Conserving Soil, Water and Vegetation for Sustenance and to resist the Impacts of Climate Change” delivered in two-day virtual International Seminar on Forest, Water and Climate Change on March 22 & 23, 2023 organized by Parul University, Vadodara.
	Lead lecture on “Natural Resource Management in Tree Based Land Use Systems: Soil and Water Conservation perspective” delivered in NAU-IES-IUFRO Conference on Tree Based Diversified Land Use System : Augmenting Livelihood Security and Industrial Growth from February 15 to 17, 2023, held at Navsari Agricultural University, Navsari, Gujarat. Proceedings : 71 - 86

	Research on Natural Resource Conservation with reference to South Gujarat, Brainstorming Workshop on Natural Resource Management for Sustainable Livelihood Security, 9 th February, 2023, Organized by Navsari Chapter of Indian Society of Agriculture at Navsari Agricultural University
2022	“Project Planning and Operational Technique for Sustainable Management of NTFP Resources” ICAR sponsored Short Course on Recent Trends in Sustainable Utilization, Value Addition and Conservation of Non-Forest Genetic Resources” (NTFGRs), organized at College of Forestry, Navsari Agricultural University, Navsari, from Jan. 9 to 28, 2022
2018	“Project Formulation and Planning in Watershed Management”, Winter School on Current and Emerging Trends for Conservation and Sustainable Utilization of Forest Genetic Resources”, organized at College of Forestry, Navsari Agricultural University, Navsari, from Oct. 24 to Nov. 14
2017	Lecture delivered on “Leveraging Water Resources for Enhancing Farm Incomes”, Winter School on Leveraging Water Resources for Enhancing Farm Income”, organized at College of Agriculture, Navsari Agricultural University, Bharuch, from Nov. 01 to 21
2016	“Natural resources with emphasis on integrated watershed management of Gujarat”, Souvenir of NAU-ISTS National Seminar on Forest and tree based land use system for livelihood, nutritional and environment and environmental security, held during Dec. 21-23, 2016 at NAU, Navsari : 148-156
2015	“Surface and Sub Surface Drainage Techniques”, Winter School, Winter School on Implications of Climate Change on Pedagogical Issues of Water Resources Management, organized at Junagadh Agricultural University, Junagadh, from Sep.21 to Oct. 11 “Surface Water Management Techniques”, Winter School on Implications of Climate Change on Pedagogical Issues of Water Resources Management, organized at Junagadh Agricultural University, Junagadh, from Sep.21 to Oct. 11
2014	Smart Horticulture through Watershed Management, Global Conference on “Technological Challenges and Human Resources for Climate Smart Horticulture Issues and Strategies” from May 28 to 31, 2014, at ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari, Organized by ASM Foundation and NAU
2013	Water Recycling and Management in Urban Areas, National Workshop on “Urban and Periurban Horticulture” on Dec. 21, 2013, at ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari, Organized by Hort. Soc. of Guj., NAU, GAAS, ACHF, Confederation of Hort. Assoc., of India (CHAI), Sponsored by NHM. : 155-163
2013	Impact of Climate Change on Horticultural Crops, Lecture deliver on Dec. 5, 201, Winter School on “Current Trends in Commercial Horticulture” from Dec. 1 to 21, 2013, at ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari, Sponsored by ICAR
2010	Drainage of water-logged clay soils Compendium Winter School on Water Resources Management in Coastal Area for Enhancing Water Productivity, Oct. 11-31, 2010, Organized by Soil and Water Engineering Department, College of Agricultural Engineering and Technology, JAU, Junagadh: 290 – 300 Groundwater Management under high water table conditions, Compendium Winter School on Water Resources Management in Coastal Area for Enhancing Water Productivity, Oct. 11-31, 2010, Organized by Soil and Water Engineering Department, College of Agricultural Engineering and Technology, JAU, Junagadh: 283-289

Honour at the National / International Event

Honour	Event
Chaired Technical Session -	5th International Conference on “Sustainable Natural Resource Management under Global Climate Change” organized by Soil Conservation Society of India from

Theme 2	Nov. 7 -10, 2023, at NASC Complex, New Delhi
Chaired Technical Session	National Conference on Transformation of Agro-Technologies for Enhancing Production Under Diverse Agro-Ecosystem organized by College of Agriculture, Waghai and Navsari Chapter of Agronomy, NAU, Navsari from October 12-14, 2023
Chaired Technical Session	NAU-IES-IUFRO Conference on Tree Based Diversified Land Use System : Augmenting Livelihood Security and Industrial Growth from February 15 to 17, 2023, under NAHEP, held at Navsari Agricultural University, Navsari, Gujarat.
Chaired Technical Session	National level Agripreneurship Bootcamp cum Ideathon” held at , NAU, Navsari from September 5 to 9, 2022
Chaired Technical Session	2 nd Indian Horticulture Summit – 2022 Organized by Society for Horticultural Research and Development, April27-29, 2022, at NAU, Navsari