



SULTAN-UL-ULOOM COLLEGE OF PHARMACY

(Estd. by Sultan-ul-Uloom Education Society)

Approved by AICTE & Pharmacy Council of India

Permanent Affiliation from Jawaharlal Nehru Technological University, Hyderabad.

B. Pharm Program Accredited by NBA

Recognized under Section 2(f) & 12(B) of the UGC Act, 1956

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COLLEGE CODE:45

SUCP/2019/ 504/86

30.07.2019

To

Dr. G. Narsimha,

Professor in CSE

NSS Coordinator (I/C)

JNTU-H, Kukatpally,

Hyderabad.

Sub:- Submission of brief note on Jal Shakti Abhiyan activities at our institution -reg.

Ref:- Your Lr.No. JNTUH/NSS/ JSA/19-20, dated 19.07.2019.

*** **

Sir,

As directed by you, we are hereby submitting a brief report and photographs of **Jal Shakti Abhiyan** activities conducted by our NSS volunteers and their team leaders.

We look forward to your continuous support and guidance in our NSS activities.

Thanking you,

Yours sincerely



Handwritten signature
NSS Programme Co-ordinator
Jawaharlal Nehru Technological University
Hyderabad-500 085.

Encls:

1. A brief report of Jal Shakti Abhiyan activities
2. Photographs of various activities

PRINCIPAL
PRINCIPAL

Sultan-UI-Uloom College of Pharmacy
Road No: 3, Banjara Hills, Hyderabad 34.



SULTAN-UL-ULOOM COLLEGE OF PHARMACY

"Mount Pleasant", Road No.3, Banjara Hills, Hyderabad – 34.

A Brief Report on "Jal Shakti Abhiyan" **(Water Conservation Activities)**

The demand for water among various sectors is increasing due to population growth & economic development. The usage of water across various sectors in India is on the rise, therefore, it's sustainable management is essential to protect the water environment and to meet the increasing water demand in the future. The city of Hyderabad has changed considerably in the past 20 years. The available space has decreased and rainfall patterns have changed.

The residents of Hyderabad city in Telangana State had grown accustomed to facing water shortages, infrequent and diminishing rainfall as well as a widespread loss of trees resulting in ground water levels falling drastically so much so, that even borewells were rendered useless even though water is currently supplied to the city from projects on the Krishna and Godavari Rivers. Still the city is facing problem of water scarcity due to low levels of ground water. Thus the decrease in ground water level has become a major worry.

To increase the need to preserve water the Sultan-ul-Uloom College of Pharmacy started small contribution towards increasing ground water level by creating rain water harvesting pits in our campus. We also conducted clean up drive of old rain water harvesting pits and conducted awareness programme on "Intensive Afforestation".

The program were held as part of Government of India initiative and directions of AICTE and JNTUH – NSS Cell at our Campus by the Principal Dr. Anupama Koneru, NSS team leaders, NSS Volunteers along with the guidance of JNTUH NSS Programme Coordinator, Dr. G. Narsimha and members of Greater Hyderabad Municipal Corporation.

Our institution came up with the approach to increase ground water level and proper pits management. If there are proper pits, groundwater level will stock up and the present water crisis will slowly come down. We initiated the water conservation by designing of proper rain water harvesting pits, organizing rain water harvesting clean up drive and rain water storage tank in the College Campus.

Our NSS volunteers took steps to improve ground water level by

1. Creating clean and rechargeable rain water harvesting pits, trenches and shaft in the campus.
2. Promote use of existing dry wells as water recharge structures.
3. Planned to connect rain water collected on rooftop to recharge structures
4. Protection of existing plants and plantation of new saplings in the open areas.

1. **Rain Water Harvesting Pits clean up drive:** Existing rain water harvesting pits were cleaned up by removing the garbage dumped in them proper fencing was done display boards were placed for identification of rain water harvesting pits.
2. **Creation of new Rain Water Harvesting Pits:** Our NSS Volunteers created new rain water harvesting pits to stock up water.
3. **Intensive Afforestation:** Along with this clean up drive, our students also participated enthusiastically in planting new saplings with a motive of per drop per crop. The active participation of our students of planting trees helps to improve intensive afforestation.

Future line of work for water conservation

- Need for efficient management practices such as adaption of improved technologies such as drip, sprinkler and preserving water qualities.
- Artificial recharge to ground water level and recharge of borewell in rural and urban areas for reuse.
- Increase public awareness on water conservation
- Creating more rainwater harvesting pits in the campus and the volunteers' localities.

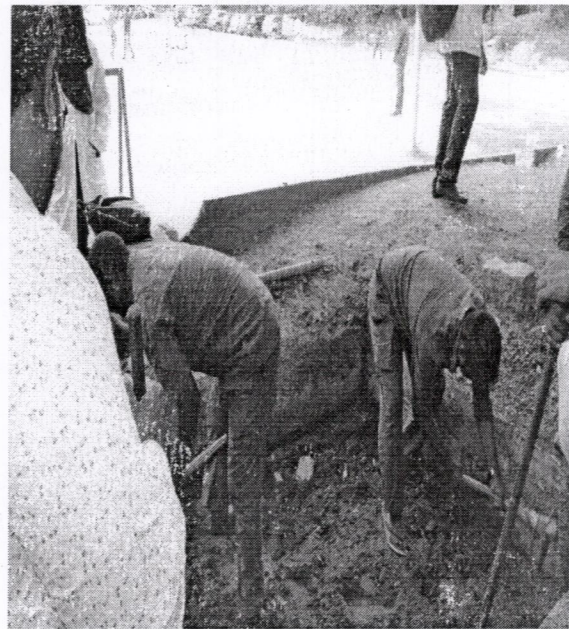
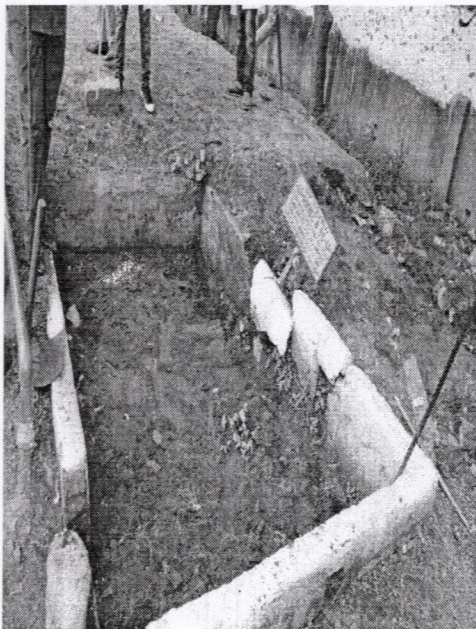


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"WATER CONSERVATION ACTIVITIES " : JAL SHAKTI ABHIYAN



Rain water harvesting pits clean up drive

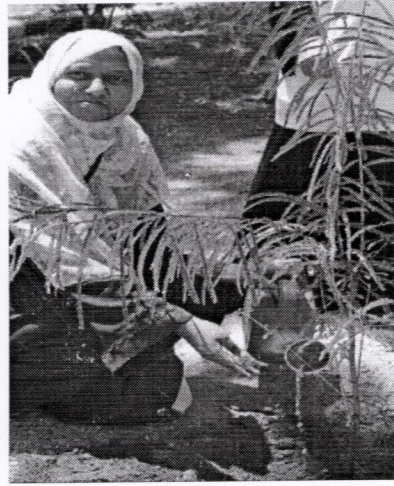
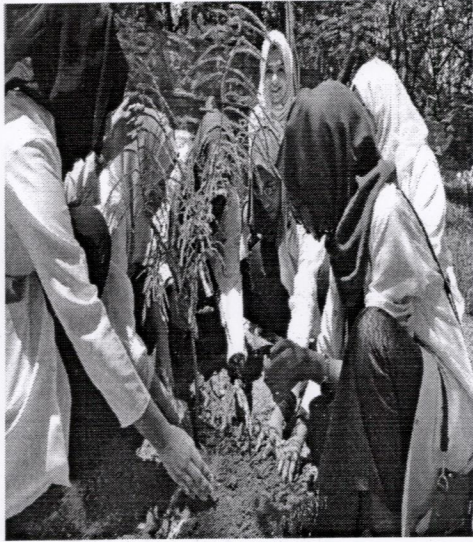


INTENSIVE AFFORESTATION



PLANTING SAMPLING





URGENT

**F.No. 11014/01/2018-EBSB (B)
Government of India
Ministry of Human Resource Development
Department of Higher Education
EBSB Cell**

534 C-Wing, Shastri Bhawan, New Delhi
Dated the 29th August, 2019

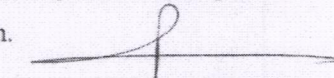
OFFICE MEMORANDUM

Subject: Manual on Jal Shakti Campus and Jal Shakti Gram – A Water Conservation and Implementation Plan for Higher Education Institutions reg.

The undersigned is directed to refer to this office OM of even no. dated 28th August, 2019 regarding observation of Swachhta Pakhwada, 2019 vide which a list of activities for water conservation was forwarded to be undertaken during the period 1st -15th September, 2019 in pursuance of the 'Jal Shakti Abhiyan' launched by the Hon'ble Prime Minister. To further continue the water conservation activities by the Higher Educational Institutions, Mahatma Gandhi National Council of Rural Education under this Department has prepared a Manual on Jal Shakti Campus and Jal Shakti Gram which is available at the Ministry's website at the link:

[https://mhrd.gov.in/sites/upload_files/mhrd/files/Jal Shakti Campus and Jal Shakti Gram.pdf](https://mhrd.gov.in/sites/upload_files/mhrd/files/Jal%20Shakti%20Campus%20and%20Jal%20Shakti%20Gram.pdf).

2. All the Heads of the Universities and Colleges are, therefore, requested to adopt the Manual on Jal Shakti Campus and Jal Shakti Gram for suitable action.


29/8/2019
(Pandey Pradeep Kumar)
Under Secretary (EBSB)

To:

The Heads of all Universities/ Higher Educational Institutions

Fwd: Atal Community Innovation Centre(ACIC) an Initiative of Atal Innovation Mission (AIM), NITI Aayog - Regarding

From: Anupama Koneru (anupamasultanuloom@gmail.com)

To: suucop@yahoo.com

Date: Wednesday, September 4, 2019, 09:50 PM GMT+5:30

----- Forwarded message -----

From: **no-reply** <admin@aicte-india.org>

Date: Wed, 4 Sep 2019 at 4:04 PM

Subject: Atal Community Innovation Centre(ACIC) an Initiative of Atal Innovation Mission (AIM), NITI Aayog - Regarding

To: <anupamasultanuloom@gmail.com>

Dear Sir/Madam,

It gives us immense pleasure in launching Atal Community Innovation Centre (ACIC) under the aegis of Atal Innovation Mission (AIM) - NITI Aayog's flagship initiative to promote a culture of innovation and entrepreneurship in the country. ACIC has a vision of creating cutting edge innovation platforms across all corners of our country, with a focus on Smart Cities, Aspirational Districts, Tier 2, and 3 cities, North-east, J&K and unserved/under-served regions of Tier 1 cities which will boost skills development and employment opportunities in these areas.

ACIC's grassroots-level approach will focus on building a community-oriented problem-solving mechanism within the reaches of citizens. ACICs will become a conduit for CSR funding by private and public sector firms in addition to direct support through Atal Innovation Mission (AIM).

The establishment of ACIC offers:-

- Promoting a design thinking process to spur community focused innovation
- Creating local, national and global synergy with all stakeholders in the ecosystem
- Conduit CSR funds to ensure the financial sustainability of ACICs
- Facilitating collaboration of ACICs with 100+ incubation centres under AIM
- Leveraging mentoring a network consisting of 10k mentors under AIM
- Enabling innovation in local clusters
- Create an atmosphere where different communities can learn from each other

The call for application to establish ACIC in the above-said areas in your state is now open. Applications are invited under the following categories:

1. Academic - Any UGC and AICTE affiliated University and educational Institutions like ITIs and other technical diploma colleges are eligible to apply for ACIC as academic applicant.
2. Non-Academic - Voluntary and other organizations having good experience and exposure in awareness and promotion of Science & Technology in the country can apply in the non-academic pool.

This is a unique project of wherein Public Private Partnership (PPP) funding is encouraged. AIM shall support up to Rs. 2.5 Cr over five years' subject to matching contribution by funding agency or by the applicant themselves. The CSR Fund or District Innovation Fund can also be leveraged for establishing such initiatives in your state. Further details are given in the attached brochure and can also be accessible over www.aim.gov.in/acic.

You are requested to kindly spread the knowledge of this initiative to Academic Institutions and Boards dealing with technical, vocational, engineering, architecture, pharmacy, applied arts and crafts education and other relevant stakeholders associated with you, to get support in establishing Atal Community Innovation Centers in all States and UTs.

In case of any query, please feel free to reach out to Dr. Unnat Pandit, Program Director, Atal Innovation Mission (AIM), NITI Aayog at pandit.unnat@nic.in.

Thanks and Regards,

R Ramanan

Mission Director - ATAL Innovation Mission

NITI Aayog - Government of India

Website: www.niti.gov.in

Twitter: @AimtoInnovate; @rramanan

Facebook page: Atal Innovation Mission

Fwd: Release of Grant in aid under PMKVY-TI scheme for AY 2017-18 & 2018-19

From: Anupama Koneru (anupamasultanuloom@gmail.com)

To: suucop@yahoo.com

Date: Wednesday, September 4, 2019, 01:20 PM GMT+5:30

----- Forwarded message -----

From: **no-reply** <admin@aicte-india.org>

Date: Wed, 4 Sep 2019 at 12:45 PM

Subject: Release of Grant in aid under PMKVY-TI scheme for AY 2017-18 & 2018-19

To: <anupamasultanuloom@gmail.com>

Dear Sir/Madam,

It is hereby informed that the process for release of Grants in Aid for the PMKVY-TI programme has been initiated. The pending installments for all institutes running the programme shall be released as per the guideline with due priority to 2017-18. The modalities for release of installments shall be as follows: -

For Batches enrolled in year 2017-18

- (a) All Heads of Institute are required to submit an undertaking regarding the continuity of programme as per the format attached.
- (b) Where only the first installment has been release and the assessments have been undertaken and results declared, the 2nd & 3rd installments shall be released in one go.
- (c) For all other cases, the installment as due shall be released as per guidelines.

For Batches enrolled in year 2018-19

- (a) It may be noted that it is mandatory to submit the record of attendance (either manually recorded or via bio metric means) in respect of all students. The grants in aid shall NOT be released if the record of attendance is not uploaded on the portal along with the undertaking from Heads of the Institute.
- (b) Those institute who have already been released the 1st installment, are required to undertake the assessment directly. The 2nd & 3rd installment for such institutes shall be processed for release together after the results are submitted along with the record of attendance. These institutes are also required to submit the expenditure statement duly certified by the Chartered Accountant for processing the release of two installments in one go.
- (c) Those institutions who have not been released the 1st installment, but have submitted the assessment results, the 1st, 2nd & 3rd installments shall be processed for release together. The record of attendance is required to be submitted as per para 3(a) above. These institutes are also required to submit detailed expenditure statement duly certified by the Chartered Accountant for processing the release of three installments in one go.
- (d) Where neither the 1st installment has been released and nor the institute has submitted the results, for such cases, the 1st installment shall be released as per the guidelines. However, the 2nd & 3rd installment for these cases shall be released on receipt of utilization certificate, attendance records and assessment results in one part directly.

All institutes may kindly note the above and submit necessary documents. Where such documents have already been forwarded, same need not be submitted again.
Institutes are thus advised accordingly.

Looking forward to an immediate action. In case of any query kindly send an email.

PFA: <https://drive.google.com/file/d/1Zoxv9w7qNVaF0z48Oww4zS2ctw8ldZr8/view?usp=sharing>

With Regards,
AICTE

परमेश्वरन अय्यर
Parameswaran Iyer



सचिव
पान, सफाई
पेयजल एवं स्वच्छता विभाग
कल शांति भवन
Secretary
Government of India
Department of Drinking Water & Sanitation
Ministry of Jal Shakti
4th Floor, Pt Dindayal Antodaya Bhawan, N.D.
110003
Tel: 24361011, 24362715
e-Mail: param.ayer@gov.in
D.O. No. 272S(DWSY)19
24th August 2019

Dear Sir,

Sub: Plastic Waste Free Campaign (Swachhata Hi Seva 2019) from 11th September to 27th October, 2019

Further to the Prime Minister's call to action for plastic waste management during his Independence Day speech on 15th August 2019, this year's Swachhata Hi Seva (SHS) will be focused on Plastic Waste Management as its main theme. The Department of Drinking Water and Sanitation is the nodal department for this campaign.

2. With a firm focus on shramdaan for plastic waste collection on 2nd October, the campaign seeks to re-energize the Swachh Bharat jan andolan and accelerate plastic waste management in villages, Urban Local Bodies (ULBs) and public places including religious places, schools, railway stations, hospitals, mandis, etc. The campaign will run as per the following timeline -

11th September - 1st October	Preparation and awareness generation
2nd October	Nationwide shramdaan and national pledge
3rd October - 27th October	Recycling and effective disposal of collected plastic waste

3. Following the presentation made on the campaign at the meeting chaired by the Principal Secretary to the Prime Minister on 22nd August 2019, the Department of Higher Education is requested to lead the campaign for awareness generation, collection and segregation of Plastic waste at institutions across the country. For this, your Department is requested to undertake the following during SHS 2019 -

- All colleges may have special plastic waste awareness generation activities for students
- All colleges may perform shramdaan in and around their institutions on 2nd October
- Arrange for collection and transport to nearest collection hub (one in each ULB/Panchayat)
- National level essay competition among students on Plastic Waste Free India
- The Ministry is also requested to examine other possibilities through which they can contribute to the success of the campaign.

4. I request that you may nominate a nodal officer from your Ministry, not below Joint Secretary level, to join us for the first meeting for the campaign at 09.30 AM on 27th August 2019 at the Conference Hall, 4th Floor, Pt. Deendayal Antyodaya Bhavan, CGO Complex, Lodhi Road, New Delhi. A draft plan of action for this campaign may also be prepared by your Department in preparation for the meeting.

Regards,

Yours Sincerely

Parameswaran Iyer

Shri R. Subrahmanyam
Secretary
Department of Higher Education
Ministry of Human Resource Development

Copy to :- Shri Nripendra Misra, Principal Secretary to PM, PMO, South Block, N.Delhi
Shri P.K. Sinha, Cabinet Secretary, Cabinet Sectt., N. Delhi.

URGENT

**F.No. M.11018/09/2019-EBSB(Pt.-1)
Government of India
Ministry of Human Resource Development
Department of Higher Education
EBSB Cell

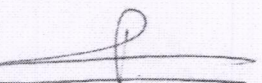
534 C-Wing, Shastri Bhawan, New Delhi
Dated the 4th September, 2019

OFFICE MEMORANDUM

Subject: Plastic Waste Free Campaign (Swachhata Hi Seva 2019) from 11th September to 27th October, 2019 – reg.

The undersigned is directed to enclose a copy of DO letter no. 2/2/S(DWS)/19 dated 24th August, 2019 received from Secretary, Department of Drinking Water and Sanitation regarding Plastic Waste Free Campaign (Swachhata Hi Seva 2019) from 11th September to 27th October, 2019 and to request all the Heads of the Universities and Colleges to undertake the activities suggested during Swachhata Hi Seva 2019.

Encl.: As above


4/9/2019
(Pandey Pradeep Kumar)
Under Secretary (EBSB)

To:

The Heads of all Universities/ Higher Educational Institutions

Jal Shakti Campus and Jal Shakti Gram

A Water Conservation Action and Implementation Plan for Higher Education Institutions



Mahatma Gandhi National Council of Rural Education

(Formerly National Council of Rural Institutes)

Department of Higher Education, Ministry of Human Resource Development, Government of India



A Water Conservation Action and Implementation Plan for Jal Shakti Campus and Jal Shakti Village Initiatives promoted by Higher Education Institutions

Strategies Proposed for Bringing Water Sustainability to Villages and Campuses of Indian Higher Education Institutions

August 2019

A Project of the Higher Education Department
Ministry of Human Resource Development
Government of India

This manual on Jal Shakti Campus and Jal Shakti Village - An Action and Implementation Plan for Higher Education Institutions for development of a Water Conservation Plan has been published by Mahatma Gandhi National Council of Rural Education (MGNCRE) Hyderabad.

It is intended to help Higher Education Institutions including Universities, Colleges and Polytechnics in developing strategies, action plans and implementation plans for water conservation on the campuses and in the villages with which the campuses are engaged with. The manual is a how to guide on water management measures including conservation measures such as water budgeting, water metering, water audit, water demand study, reduction in water losses and management of demand and supply of water in a campus and the villages with which the Higher Education Institutions are engaged with in National Service Scheme (NSS), Swachhta Action Plan (SAP) and Unnat Bharat Abhiyan (UBA).

For questions or comments: Email admin@mgncre.in

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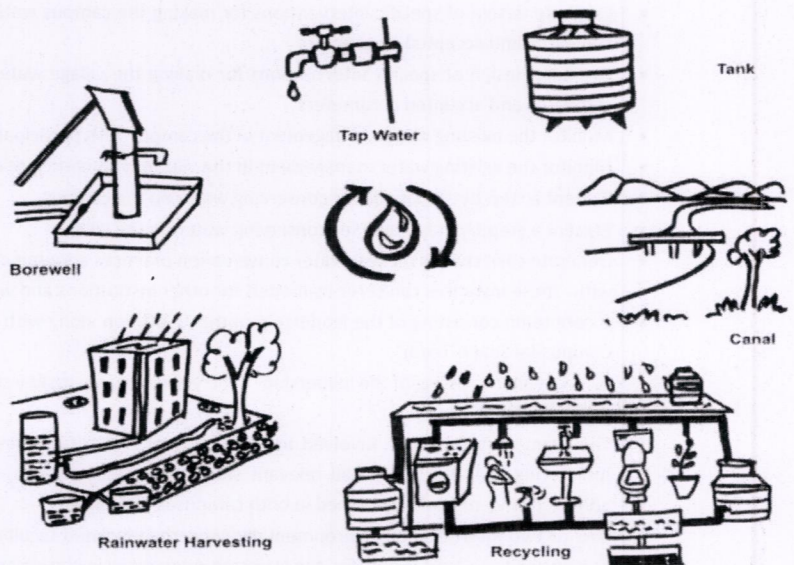
List of Formats



Introduction

Higher education institutions (HEIs) enjoy tremendous autonomy in terms of managing their natural resources. They are virtually independent and are internally regulated, while civilians, businesses, industries and others are subjected to, with close external monitoring and accountability. This opportunity of self regulation available to them with their own heads of universities presiding over their internal resource management system as the final authority can be the springboard to water conservation. Water conservation needs to be ingrained in not only the consciousness but also practices of every citizen and system. HEIs have to make unremitting efforts through faculty, staff and students to make the Jal Shakti Abhiyan successful. Key Water challenges include Water Conservation, Water Quality Management, Watershed Management, Storm water Management and Wastewater Management.

Management of Water Resources in the Campus



- The Jal Shakti Team will report to a team of campus officials representing accounts, administration and maintenance divisions, with an avid interest in the water conservation initiatives: Jal Shakti Admin Group.
- The entire programme will run under direction from the designated authority that will set the policies, rules and directives for bringing change.
- Jal Shakti Team External Members for Water Conservation need to be identified from neighbouring Universities/HEIs/Colleges. They will support in monitoring the progress at regular intervals
- Water Conservation Initiative can be a successful only if the Head of the Institution ignites the spirit of everybody in the organization. S/he needs to direct the departments, pay attention to the findings of student teams and ensure that their valuable suggestions are followed in letter and spirit by all students, faculty members as well as administrative, non-teaching and support staff. A motivated leader can bring a sea-change in the system and therefore s/he is the cornerstone of this campaign. An advisory committee may be constituted to guide the initiative.

Parameters for Campus Score in Water Conservation

Physical Appearance and Overall Ambience

Water Conservation

- Adequacy of Water
- Plumbing adequacy of water taps and Sanitary fixtures
- Water Efficient Toilets
- Dedicated Staff for Water Maintenance
- Dedicated Staff for Water Inspection
- Periodic mending and repairs of leaks in taps and pipes
- Two levels of flushing in all the toilets
- Planting indigenous variety of plants and less water requiring plants
- Organising water conservation workshops to the faculty and students on the campus

Rainwater Harvesting

- Installation of rain gauge and rain recording system
- Steps taken for implementing rainwater harvesting inside the campus
- Digging rainwater harvesting pits on the campus
- Educating on Water Harvesting through workshops/seminars

Renovation of Traditional and other Water Bodies/Tanks

➤ **Water Quantity and Quality monitoring and annual targets on identified indicators of**

- a. Every Higher Educational Institution shall designate its various sources of water for various uses in its campus basing on the quality and recyclability.
- b. Regulate use of ground and surface water (use best quality of water for best use and lower quality of water for cleaning and washing as well as flushing)
- c. Every HEI Campus unit in every higher educational institution shall install appropriate Rainwater harvesting structures in identified locations in the campus (form the total campus into manageable zones based on the terrain and gravity)

➤ **What is measured gets monitored. What is monitored gets managed.**

- a. Install water use meters and flow meters at all bulk water dispensing locations and tanks.
- b. Keep the ground water drawn metered and monitored

➤ **Monitor overhead tanks**

- a. Monitor the overhead tanks noting the difference in levels of water in the overhead tank at designated time every day.
- b. Ensure that the tanks are full as each day begins. Note the difference in levels of water for estimating the consumption of the day.

➤ **Motor metering method**

- a. Per minute pump wise flow of water or water output is to be measured and the time or number of hours and minutes the water pump is switched on is to be measured and water output is to be calculated.
- b. Every time the motor runs, this is counted and added to estimate the withdrawal of water.
- c. Conduct this water audit followed by the preparation of water budget for the campus.

➤ **Estimate the source of the campus water-**

- a. Identify the sources of the campus water and the capacity of yield from each source
- b. Identify various uses of water in every campus
- c. Measure and monitor water table on the campus and the seasonal variations, especially in bulk consumption locations

- b. Select local species that are resilient, fruit-bearing, useful shall be planted in place of present irrigation intensive plants
- c. Plants like lantana and other exotic species need to be avoided.

➤ **Administration**

- a. Form Campus Student Teams
- b. Involve Engineering Wing, Administration Wing, Planning Wing and Horticulture Wing of the University Department to handle water related works.

Table 1: Master Chart for Assessing whether the Campus is Water Smart

S No	Criteria	Yes	No
1	Water Budget		
	a. Has your Campus prepared water budget for short term, day wise, week wise, month wise, and quarterly (seasonal) water budget		
	b. Do you have rain gauge and rain recording system at various locations on the campus?		
	c. Have you constructed rainwater harvesting structure for each Campus Unit Area on the Campus?		
	d. Did you design and install contour trenches as per the local capacity, terrain, gradient of land, soil porosity and rainfall?		
	e. Did you design and install artificial ponds as per the local capacity, terrain, gradient of land, soil porosity and rainfall?		
2	f. Did you design and install roof top water harvesting structures as per the local capacity, terrain, gradient of land, soil porosity and rainfall?		
	Water Quantity and Quality Monitoring		
	a. Did you designate its various sources of water for various uses in its campus basing on the quality and recyclability?		
	b. Do you regulate use of ground and surface water (use best quality of water for best use and lower quality of water for cleaning and washing as well as flushing)?		

	a. Do you have water recycling opportunities on the campus basing on the bulk water usage and dispensation points?		
	b. Do you practice first-in first-out method for retaining the quality of drinking water?		
	c. Do you practice counter current method of using Best Quality Water for Best Use Viz., drinking, bathing, gardening, and cleaning?		
	Plugging Leakages		
10	a. Do you have campus unit wise (area-wise) water watching team which stops the water wastage?		
	b. Do you adopt a method of geo tagging the water leaking points and app-based alerts of the plumbers on the campus to arrest water leakages and water stagnation-related challenges?		
11	Plantation		
	a. Have you planted ornamental roadside trees, monoculture and China grass lawns?		
	b. Are you willing to replace or plant select local species that are resilient, fruit-bearing, useful plants in place of present irrigation intensive plants?		
	c. Will you avoid planting lantana and other exotic species?		
12	Administration		
	a. Did you form Campus Jal Shakti Student Teams?		
	b. Did you Involve Engineering Wing, Administration Wing, Planning Wing and Horticulture Wing of the University Department to handle water related works?		

Result: Water Smart – 75% Yes - compliant

Table 2: Assessing Campus Score in Water Conservation

2.1 Water Budget (source wise and bulk usage location wise)					
S No	Criteria	Day Wise (in 000s litres)	Week Wise (in 000s litres)	Month Wise (in 000s litres)	Quarterly(in 000s litres)

MGNCRE

Consumption (Excess/Deficit)													
	Percentage of Water Drawn in excess/ need to be supplemented	Day Wise (in litres)			Week Wise (in litres)			Month Wise (in litres)			Quarterly (in litres)		
		Source 1	Source 2	Source 3	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3
1.	Drinking												
2.	Washing												
3.	Flushing												
4.	Cleaning												
5.	Gardening												
6.	Other uses												

Source 1: Pipeline through municipality/corporation/ PWDs/ gram panchayats

Source 2: Well, borewell and tube well on the campus

Source 3: Waterfall, stream, canal (independent sources)

Usage of water

Usage of water depends on availability, habits and the quality of water dispensing systems like taps, storage points and pipelines

a. Actual water consumption – Ideal water consumption = A (quantity of excess water consumed)

b. $A/\text{Ideal quantity of water consumption} \times 100 \times 0.10 = X$

c. Points scored for quantity of water consumed = $20 - X$

Water Consumption

If the consumption of your institution is less than 30 LPCD (Day scholar), 100 (hosteller) and 135 LPCD resident your institution gets 10 points, a. deduct 0.9. for every liter consumed over 30 LPCD (Day Resident), b. deducts 0.9. for every liter consumed over 100 LPCD (hosteller)

8.	Are the chloroscopes used giving effective readings?		
9.	Is the RO water provided in every building? (1 point)		
10.	Is the RO water supplied consistently everyday through refills? (1point)		
	Total		
	Water Quality Monitoring		
11.	Is the water filter/ R.O machine in good working condition?		
12.	Is it maintained under AMC?		
13.	If water is supplied by a private agency, is it tested OK?		
14.	If water filters are absent, is drinking water boiled before serving?		
15.	Is the filter leaking/ in rusty condition?		
16.	Is drinking water available 24/7?		
17.	Is the area around the inlet and drinking water point clean and dry?		
18.	Is there safe, clean water available for cooking and cleaning?		
19.	If water supply is intermittent, is there a water storage tank provided for the kitchen?		
20.	Is the tank cleaned regularly?		
	Total		

Rainwater Harvesting on the Campus

Rainwater is the main water from natural source. Every campus can harvest water depending upon the area on the campus. This could be both paved area and unpaved area. For the purpose of location specific groundwater recharge and for harvesting efficiency, paved water catches and provides higher quantity of water. Rainwater is also universal carrier of waste on its route. It is essential to keep the rainwater route clean to ensure free flow of clean water and better recharge of rainwater. For this, the following calculations and data are required.

8.	Do you conduct water audit every day?		
9.	Do you prepare water budget?		
10.	Do you monitor the difference in levels of water in the overhead tank beginning of the day?		
11.	Do you check the difference in levels of water in the overhead tank when teaching and learning activity ends during the day?		
12.	Do you ensure that the tanks are full beginning of each day?		
13.	Do you estimate the consumption of water by end of the day?		
	Total		

2.4 Water Conservation (20 points)			
S No	Criteria	Max Points	Scored
	Functional taps without leakage in the toilets and campus		
1.	Availability of functional taps (all points of use) on the campus toilets and bath areas (students, faculty, visitors)	5	
2.	Availability of functional taps excluding toilets and bath areas on the campus (students, faculty, visitors) – kitchens, gardens, public areas		
3.	Are leaking taps reported immediately? Frequency of taps replacement		
4.	Investing on good quality taps (rust-proof, PVC). Tap Inspectors – frequency of visits		
5.	Do pipe leakages get immediate attention?		
	Network of water pipelines – observe for leakages		
6.	Weekly checking of water pipelines for leaks	2	
7.	Hygiene maintenance in water pipeline areas		
	Leakages impacting roofs and sidewalls		
8.	Identification of leaking points on roofs and sidewalls	3	
9.	Experts/Engineers' Inspection and advice on impact of leaking roofs and sidewalls		
10.	Weekly repairs/ maintenance of leaking roofs & sidewalls		

Total		
--------------	--	--

2.6 Recycling (30 points)			
1.	Is Sampling and analysis of Waste Water done?		
2.	Is there a plan for recycling waste water on the campus?		
3.	Is there a method for collection of used water for recycling?		
4.	Is gray water or non-recycled water used for any purpose?		
5.	Is recycled water used in all blocks of the campus?		
6.	Is the recycling equipment well maintained?		
7.	Is the waste water collected daily, weekly, monthly, annually?		
8.	Is the collected waste water recycled daily, weekly, monthly, annually?		
9.	What is the percentage of waste water recycled?		
10.	Is the wastewater from R O Plants diverted for any purpose?		

2.7 Plantation (15 points)			
S No	Criteria	Max Points	Scored
1.	Area under green cover	5	
2.	Campus Nursery Management		
3.	Plant Protection Management		
	Total		
	Total land area occupied (3 points)		
	Land Area	Area in Square metres	

Our campus grounds provide excellent learning opportunities on plant and animal resources and the natural world around you on the campus map. Proper land use can transform our campus area into biologically diverse outdoor classrooms and healthy open spaces. Green area in the campus reduces air pollution and helps thriving diverse local species of plants and animals. We need to measure the green area in the campus. To monitor the green area, we need to manage the green area on the campus.

The following are the steps: Calculate the percentage of green area on the campus.

The following are the steps:

Calculate the percentage of green area on the campus.

33% Area under Green Cover 66 Points @ 2 points per 1% of Green Cover

2.8 Administration (20 points)			
S No	Criteria	Max Points	Scored
	Dedicated Staff for Water Maintenance	4	
1.	Availability of adequate staff - men and women for maintenance Is any teaching/admin faculty specifically allotted the task of monitoring all water issues?		
2.	Is sufficient number of cleaning staff available? If required enquire about working conditions from a few staff members to ascertain workload and training)		
3.	Is there job rotation for maintenance staff?		
4.	Is the staff motivated to maintaining a water smart campus?		
	Plugging Leakages	2	
1.	Do you have area-wise water watching team which stops the water wastage?		

- Meters help influence water use
- Efficient meters help in pointing out the extent of water use and thus we can identify and calculate the excess use. It will support in repairing leaks, plumbing, and installing more efficient water-using fixtures.
- Meters are necessary for efficiently maintaining water systems, assessing demand, and determining expenditures.
- Maintenance of water meters is necessary for carrying out the required functions.
- With mud, sand and minerals passing through the meters, the measuring elements increase/decrease the tolerance in the chamber.
- A regular program of meter testing and maintenance needs to be done
- An appropriate meter record data with history cards will help in providing information on meter size, make, type, date of purchase, location, and tests and repairs.

The goal of water metering is to provide an accurate measurement and record of water use, and promote water conservation

Format 1: Sample Meter History Record Form

Sample Meter History Record Form							
A: Meter Information							
Mfr. No.	Co. No.		Make	Size			
Date Purchased	Cost		Style				
B. Installation Record							
Installed		Name	Address	Tap No.	Removed		
Date	Reading				Reason	Date	Reading

f. Other -----%

4. How often are meters calibrated? Never, Monthly, Quarterly, Half Yearly, Annually
5. How often are the meters read? Never, Monthly, Quarterly, Half Yearly, Annually
6. What is the general condition of the meters? Very Good, Good, Bad _____
7. Do you have an ongoing program to monitor, check, repair, and replace meters?
____ YES__ NO

What is the program?

8. Has the meter repair and calibration program on campus been effective in reducing the amount of unaccounted-for water, increasing revenues, or decreasing demand?
Explain briefly:

9. Are there any problems in preventing the accomplishment of an optimal metering program?
Explain briefly:

10. What is the estimated annual expenditure on metering?

- The water supply audit is an indispensable step in making those determinations and setting priorities.
- The steps of a water audit include:
 - identifying and quantifying all water sources and all metered uses
 - identifying and estimating authorized unmetered uses
 - identifying and estimating water losses by types
 - analyzing audit results
- There needs to be a consistency in terms of audit period and water units measured.
- The audit results will help in forecasting water demand and conducting a leak detection and repair program.
- The campus needs to have a current list of all water sources supplying to the distribution points, including interconnections with other sources.
- Source locations/connections need to be illustrated on a map systematically.
- Each source or interconnection needs to have a way of measuring quantities supplied to the distribution points.
- For each source, the following needs to be recorded:

Table 4: Water Source Information

✓ Name of source	
✓ Type of source (well, reservoir, natural surface water body, purchased)	
✓ Type of measuring device	
✓ Date of installation	
✓ Frequency of reading	
✓ Frequency of testing	
✓ Date of latest calibration	

- Each storage tank/storage reservoir needs to be measured at the beginning and the end of the audit period.
- If total storage has increased, that difference needs to be subtracted from the annual supply total.
- If total storage has decreased in total storage, it needs to be added to the total supply.

September				
October				
November				
December				
Source Total				
Total Annual Supply to the Campus				

- Every open over head tank needs to have a scale for measuring the water at each level.
- Where water is used in tanks, volumes can be estimated by multiplying the volume of the tank by the number of times it is filled or looking at the levels at which water has been there before and after filling.
- Where water is applied directly from a pipe, the average discharge rate can be multiplied by the total time during which it flows.
- Landscape use can be estimated by comparing watering routines. Frequency and duration of watering can be obtained from the persons responsible for landscape maintenance. Water uses from decorative fountains and pools need to also be estimated.
- Information on draining and refilling, and also on average daily evaporation can be obtained from facility operators.
- A per student or per resident use (drinking, bathing, flushing) can be applied to the facility wise population in the campus community.

Format 4: Water Audit

Campus Water Audit				
S No	Item	Water Volume		UNITS
		Subtotal	Cumulative Total	

10	Identified Water Losses:			
10a	Source Meter Error (+ or -)			
10b	Accounting Procedure Errors			
10c	Malfunctioning Distribution System Controls			
11	Total Identified Water Losses (Add Lines 10a through 11c)			
12	Unidentified Losses (Potential Leakage) (Subtract Line 12 from Line 10)			

Conducting a water audit is one way to discover evidence of insufficient record-keeping, faulty metering, illegal taps, leaking storage tanks, or leaking mains.

Plugging Leakages

- Leakage represents the largest share of wastage as well as unauthorized water use.
- Each source meter needs to be reviewed for accuracy, either by reviewing available meter test results or retesting the meter.
- System valves need to be checked periodically for malfunction. For instance, altitude control valves on storage tanks might be broken or set improperly, allowing the tank to overflow. These valves need periodic inspection, more so when there is observed leakage or overflow
- Pressure relief valves which are set too low might cause spill when pressures reach the high range. These pressure relief valves need to be calibrated accordingly
- When problems are discovered during routine inspections, possible water losses need to be estimated and corrective action can be taken up immediately

Format 5: Leak Report

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Leak No.	Location or Address of Suspected Leak	Place	Leak Pin-pointed (Y or N)	Leak to be Rechecked (Y or N)	Leak Repaired (Y or N)	Not a Leak/Date

Survey Time:
_____ hours

Miles of Main
Surveyed: _____

Pinpointing Time:
_____ Hours

Average survey rate= _____ Miles of main surveyed*8 = _____ miles per day Total survey and pin
pointing hours

TOTAL number of visible leaks reported since survey started, from other sources (not discovered during leak
detection surveys.)

Leak Repair Summary

Date first leak

Date last leak

Repair Made: _____ / _____ / _____

Repair Made: _____ / _____ / _____

TOTAL

Water Losses from

TOTAL amount of Excavated Leaks: _____

TOTAL

Water Losses from Non-

excavated Leaks: _____ Losses: _____

- Reducing excessive pressures in the distribution system can save a significant quantity of water.
- Reducing pressures decreases leakage, amount of flow through open taps, and leak-causing stresses on pipes and joints
- Water demand can be reduced directly or indirectly. Direct methods are those which physically suppress demand. They include changes in plumbing fixtures, pipe insulation to reduce waiting time for hot water to reach the tap.
- Indirect methods are those which offer an inducement to reduce water use. These methods primarily include water use pricing and billing, public education about water supply, use and conservation, and legal restrictions or limits on use.
- Using water-saving plumbing fixtures is the most effective way to minimize water use within residential, commercial, and institutional buildings.

- Soil Preparation: Prior to installation of landscape, tilling of ground, addition of organics and other additives as necessary to achieve a well drained soil with adequate water holding characteristics and chemically balanced to be a suitable environment for plant and grass roots.
- Encourage Use of: Rock plants for color and water-loving plants in naturally wet or drainage areas.

Action Plan

Higher Education Institutions generally have vast land area with substantial scope for harvesting rainwater, maintaining green cover and compost yards. Therefore, universities can act as lung spaces for the city. The university administration needs to identify faculty members as well as students who are actually interested in water conservation.

Upon selection, each of them can be assigned care of one aspect of water conservation activity –

- Water conservation and rainwater harvesting
- Renovation of traditional and other water bodies/tanks
- Reuse and recharge structures
- Watershed development
- Intensive afforestation

Each group needs to comprise a faculty member and 5 to 10 students who will follow the initial steps:

- Study and monitor each area's current status on the campus
- Identify problems in that particular sector and their impact on people
- Devise methods or alternatives to solve issues
- Submit a report to the campus administration
- Follow them up weekly to initiate action

Step 1. Student Selection

- A qualifying test may be conducted to select students covering topics relating to sanitation and hygiene, water conservation and water related matters, team work, community responsibility, basic environmental science, health and hygiene, general knowledge; current affairs dealing with local news, sustainability and attitude.

- Conduct in-field training and workshops

Step 4. Mapping the Campus: Survey and Ground-truthing:

- Water Conservation/Jal Shakti Students Group teams work together across departments to prevent any overlap.
- The survey is to be conducted in three methods: observation, questionnaire and interview. Each student needs to observe an identified area. The student needs to interact with least 20 residents and employees on the campus on the current water scenario there.
- The questionnaire is to be structured around Water conservation and rainwater harvesting, Renovation of traditional and other water bodies/tanks, Reuse and recharge structures, Watershed development, Intensive afforestation. A common questionnaire needs to be used to get consistent information.
- Seek ideas, opinions and suggestions from stakeholders to improve the campus along with their willingness to participate.
- This survey needs to spread awareness regarding Water Conservation Campus Initiative and popularize the concept within the campus and beyond.
- Teams surveying the campus needs to get in-depth information and clear understanding of the current scenario to help analyse, and generate creative, practical ideas and solutions.

Step 5. Identifying areas for immediate action

- After survey and ground study, the Water Conservation/Jal Shakti Students Group needs to collate and draw
- inference from the data
- Survey results need to be consolidated into a convenient format for analyses.
- Areas which need immediate attention have to be listed.
- The list is to be marked on the campus map and displayed.
- After survey at Student Group level, a team meeting of all departments needs to be conducted for exchange of ideas and holistic understanding of the campus scenario.

Step 6. Planning Interventions

- Chart out interventions to be planned for Water conservation and rainwater harvesting, Renovation of traditional and other water bodies/tanks, Reuse and recharge structures, Watershed development, Intensive afforestation
- Incorporate on the campus a map for easy reference.

Format 7: Record-keeping and Supervision

Form a committee to audit water consumption. This committee may include staff, faculty and student groups.

University / HEI:
Jal Shakti External Member:
Jal Shakti Team Leader:
Jal Shakti Core Team:
Jal Shakti Faculty:
Jal Shakti Administrative Staff:
Jal Shakti Students Team:



Step 9. Analysis

- The water audit documents, Jal Shakti action plan and evaluation documents, feedback and review documents help the Jal Shakti Team to focus on the priority areas for implementation and also fix responsibility on the team that is working on the problems areas to complete the action within a given timeframe. These may be in hard copies, electronic format, or both as per the convenience of the institution. It is important to maintain standard formats for the ease of comparison.
- The Jal Shakti Team plays a vital role in supervision, reporting, quantifying, observing compliance as well as non-compliance of the new rules. The team's findings will be shared within the department and during inter-departmental meets and incorporated in the analysis.

- The university may designate space in one of the buildings which can be used by the Jal Shakti Team to hold monthly meetings and training programs.
- Jal Shakti Student team and NSS team can be asked to work together on Water Conservation.
- In time, the University can find funding to expand this space into a full-fledged Student Environment Centre or Water Conservation Centre built on green building guidelines and taking into cognizance the requirements and aspirations.
- University may assign full-time/part-time staff to manage the Water Conservation activities or allow senior students to intern.
- Water Conservation Centre could be the hub for water conservation projects, weekly or monthly meetings, preparing for Water Conservation/Jal Shakti relevant days.

Step 11. Reporting

- The results of analysis will reveal several aspects of information on water worth reporting. Reporting needs to be done by incorporating only factual and objective information.
- Both internal and external reports are necessary. Internal reporting encourages accountability and ownership. It provides aggregate information on the performance summarizing its findings, and providing conclusions of the assessment against pre-determined criteria.
- Internal reports on Water Conservation/Jal Shakti Campus Initiative need to be circulated within the campus through intranet and in-house magazine.
- Small parts of the report can also be displayed on notice boards, updating them every week. Mention the link to read the full report online and encourage the students to read the full report.
- External Reporting targets stakeholders outside the campus. External reports need to be accurate, timely and of high quality, reviewing the effectiveness of the Water Conservation/Jal Shakti Campus Initiative with absolute transparency. They need to be made available on the official website of the institution. The availability of the report needs to be widely publicised.

Step 12. Feedback & Review

- Once the reports are published, they will be reviewed by people on- and off-campus. This needs to result in feedback from the readers.
- Feedback could be positive, e.g. appreciation, fresh ideas to improve the implementation of the Water Conservation/Jal Shakti Campus Initiative. Feedback could also be critical of the effort, criticizing some of the policies and practices. The critical feedback

As the Water Conservation/Jal Shakti Campus Initiative progresses over a period of time, it is likely that many outsiders would visit the campus to learn more and to get the University's support in replicating the same model in their areas. For this, the campus needs to have a visitor centre and support team to conduct a guided tour and give necessary information to the visitors.

This is not the end of the road. Students enrol into the university every academic year. The process needs to begin afresh every year to involve the new entrants. Though identifiable challenge areas will be fewer every year considering that work at ground level has been happening already, students will still learn being involved in all the practical aspects of running the Water Conservation/Jal Shakti Campus Initiative.

Convergence with Mandates/Government Programmes

Water Conservation/Jal Shakti Campus Initiative can be converged with certain government programmes and mandates such as Unnat Bharat Abhiyan, Rurban Mission, Smart City Mission, Swachh Bharat Abhiyan, ODF or Total Sanitation Campaign whenever possible or appropriate.

Water Conservation/Jal Shakti Students Teams support the village the institution has identified to engage with under the UBA or SAP or NSS to study and support the villagers with implementable solutions through participatory planning, especially in water management, energy use and sanitation.

Table : Convergence of Water Conservation/Jal Shakti Campus Initiative with Govt. Program/Mandates

S.NO	Details	Response
1	Name of the Water Conservation/Jal Shakti Team	
2	University/HEI	
3	Department	
4	Activity Chosen	
5	Activity Start Date	
6	Activity End Date	
7	Govt programs that the activity converges into	

Table: Ways to Mark Water Related Days

World Wetlands Day	Feb 2	Revisit recycling system on campus, rainwater harvesting structures, organize a stream/ river/ well/ pond cleaning exercise, initiate drip irrigation on campus, separating storm water and drain water, survey and correct or check damaged water supply pipelines and water wastage zones.	
World Water & Sanitation Day	Mar 22		
World Earth Day	April 22		
World Environment Day	June 5		
World Water Monitoring Day	September 18		

Format 9: Record of observing Key Water Days

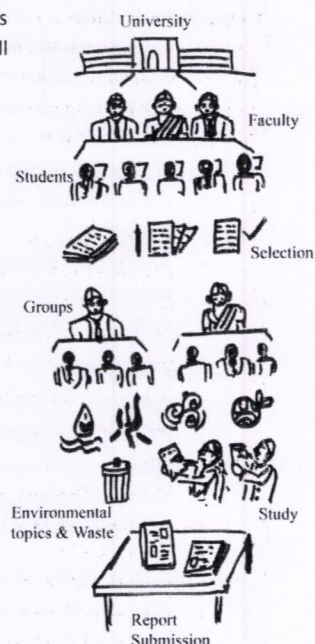
S.No	Name of Water Conservation/Jal Shakti Team	
1	University/HEI	
2	Department	
3	World Water Day	
4	Activities Conducted	
5	Awards Presented (if any)	
6	Any other Information	
Record Prepared by:		
Record Verified by:		

- Does the HEI offer direct or indirect technical assistance?
- Does the HEI submit campus water status reports periodically?

The sustainable management of our freshwater resources is a crucial component of supporting future population and economic growth. An integrated approach to water management is recommended to address current water challenges, which are often interrelated with other environmental, economic and social issues. Universities and colleges have missions, resources, and contexts that could enable them to lead the process of developing and applying sustainable and integrated water resource management. Higher education institutions are major drivers of change in achieving environmental sustainability both within the campuses and beyond campuses in communities at large. However, achieving campus sustainability is not possible without the involvement of all campus stakeholders including the students as one of the major stakeholders of a university.

Feedback received can be chronicled as Suggestions as below Example

- Campus can have fruit bearing trees. It is better to grow wild varieties in order preserve the seeds of wild varieties. Wild varieties are strong and disease resistant.
- One student - one tree - has to be achieved and sustained as envisaged by the Ministry of HRD.
- Trees like coconut do not occupy much space. They add to the beauty of campus round the year. Their maintenance does not require much water. Campus waste water can be channeled to them.
- Time Table for maintenance of garden can be kept for improvement. This can be an engagement for everyone on the campus
- Taps can be turned two rounds for washing hands. This can be labelled at all taps of the campus
- Campus shall have siren or alarm if the water used is above average. This helps self audit for water consumption
- Use of washing powder saves water. A separate channel of washing water can be reused for toilet flush
- Construction plan can include water recycling aspects and processes.
- The more the ground water is avoided the better it is
- Campus can grow bamboo as they multiply from shoot and grow faster with less water



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Academic Heads

Provide resources for respective faculty to integrate environmental issues and perspectives into their existing courses by developing and launching faculty training programs, holding seminars on Water Conservation, and by including field work and demonstration in the teaching methods.

Incharge of Student Affairs

- Work with the counselling team in creating and implementing the orientation programme for first termers
- Explain the rules to follow for a Water Smart Campus to Faculty Members (Professors, Associate professors, Assistant Professors)
- Support the Water Conservation Faculty as well as NSS coordinator in their initiatives

NSS Coordinator

- Would support the Water Conservation/Jal Shakti team of all departments
- Will look into overall aspect of Water Conservation Initiative
- Involve the NSS members into the Water Conservation Initiative
- Survey the campus fortnightly
- Conduct a surprise visit once a month
- Motivate students for smooth conduct of the Water Conservation Initiative

Building Maintenance Managers Look into aspects of water conservation, waste water management and cleanliness

Dining Hall/Canteen Managers Kitchen and food water management, cleanliness, waste water management, water conservation

Research Associates

- Can introduce and deploy water conservation practices and technologies in their research field and laboratories
- Encourage other students in these practices and technologies in the laboratories
- Residents of campus Support the water conservation initiatives even at their residence

Industries

- Can have Water Conservation as a stamp for promoting their products



Partnering with other institutions and agencies

The campus is a fully functional unit but not a closed entity. It needs strong alliances to bring the dream of a Water Smart Campus to fruition. Some of the alliances that will support the endeavour are

- Funding Agencies: MHRD/UGC/AICTE
- Donors: Alumni, NGOs, Private Foundations and corporate houses, etc.
- Non-profit Organizations: To help with awareness campaigns or connecting to external vendors, self-help groups
- Public Policy Groups and Think Tanks: Assistance/guidance may be sought from World Water Council, Project WET, Clean Water Action, Water Aid, Water.org, Blue India Program, Clean WASH Program, FORCE Institute of Water Efficiency/Social Innovation, Green Building Council, Municipalities, Local Bodies, Centre for Science and Environment (CSE) and Council on Energy, Environment and Water (CEEW).
- Media and Celebrities: Long-term collaboration with media and celebrities provides impetus to mobilize the campus residents.
- Government: The Government launches new environmental schemes from time to time. The Institute can benefit from these schemes and make them a part of the campaign for Water Conservation.

- c. Water Management Policy: The HEI needs to commit to following the Water Management and Conservation Policy. Include specific procedures for different types of waste water collection, recycling, rainwater harvesting and rules and regulations.
- d. Student Activity Policy: Maintenance and management of water also during students' cultural programmes or any student activities.

Suggested Reading: Case Studies

- Design of rainwater harvesting system at Shilpa Hostel in JNTUA College of Engineering Ananthapuramu: A case study from Southern India: Meda Kalyan Kumar JNTU
- 17 lakh litres of rainwater conserved through rainwater harvesting - Case study of RV College of Engineering, Bangalore from the work of Biome Environmental Solutions - Article from Clean India Journal
- Rooftop Rain Water Harvesting Potential: A Case Study of Dahivadi College Building and Campus in Man Tahsil of Satara District: C. J. Khilare¹, S. N. Pawar D. D. Namdas and V. P. Gaikwad
- Water Conservation and Water Management Model through Institute, Industry and NGO Collaboration – A Case Study Mona N Shah, Mangesh Madurwar
- Rainwater Harvesting System at Jamia Hamdard University New Delhi
- Rainwater Harvesting System at Goa University
- Constructed wetland to treat Wastewater at Indian Institute of Technology, Powai, Mumbai
- Rainwater Harvesting System at Centre for Science and Environment
- On-site and Off-site Impact of Watershed Development: A Case Study of Rajasamadhiyala, Gujarat, India. Global Theme on Agroecosystems: International Crops Research Institute for the Semi-Arid Tropics.

Jal Shakti Village Initiatives promoted by Higher Education Institutions

Role of Higher Education Institutions in Jal Shakti Village

- Each HEIs which participates in Jal Shakti Campus will identify the neighboring village as Jal Shakti Village.
- A core team consisting of key stakeholders including the HEI participants may be formed under the leadership of the village. The team shall work as “Gram Jal Shakti Team”. The HEI Jal Shakti Team will provide technical support to the Gram Jal Shakti Team
- The Gram Jal Shakti Team with the support of HEI Jal Shakti Team will be involved in all aspects of Gram Jal Shakti viz., Participatory Rural Action, Participatory Learning and Action for exploring, surveying, fact-finding, recording, planning, and monitoring of activities relating to water conservation.
- Gram Jal Shakti Team Create awareness on the need for water conservation in village and gain consensus through involvement of all members in the village.
- Facilitate design of specific interventions for enabling the Village water sufficient and water use efficient by following best available standards and accepted parameters.
- Monitor the existing water management in the village with participation and transparency.
- Present a step-by-step guide for conserving water in the village.
- Document case studies on best water conservation practices adopted in the village.
- These instances can serve as models for other higher education institutions to adopt the village and to emulate for other villages.

	e . Did the village design and install contour trenches as per the local capacity, terrain, gradient of land, soil porosity and rainfall?			
	f. Did the village design and install artificial ponds as per the local capacity, terrain, gradient of land, soil porosity and rainfall?			
	g. Did the village design and install roof top water harvesting structures as per the local capacity, terrain, gradient of land, soil porosity and rainfall?			
	Water Quantity and Quality Monitoring			
	a. Does the village intend to designate its various sources of water for various uses basing on the quality and recyclability?			
	b. Did the village designate its various sources of water for various uses basing on the quality and recyclability?			
2	c. Does the village regulate use of ground and surface water (use best quality of water for best use and lower quality of water for cleaning and washing as well as flushing)?			
	d. Does the village carry out rainwater harvesting in identified locations (forming total village into manageable zones based on the terrain and gravity)?			
	Monitoring and Management			
	a. Does the village intend to install water use meters and flow meters at all bulk water dispensing locations and tanks?			
3	b. Did the village install water use meters and flow meters at all bulk water dispensing locations and tanks?			
	c. Does the village keep the ground water drawn metered and monitored?			
	d. Does the village conduct the water audit followed by the preparation of water budget for the village?			
	Monitor Overhead Tanks			
4	a. Does the village intend monitoring the differences in levels of water in the overhead tank from the beginning of every day?			

	b. Does the village take steps in mending the leaks in taps and pipes with a designated frequency?			
	c. Does the village school, anganwadi, health centre, post office have two levels of flushing for optimum water use introduced in all toilets?			
	Manage Water			
	a. Does the village intend to introduce less-water-intensive agricultural practices, gardens and lawns?			
8	b. Does the village have less-water-intensive agricultural practices, gardens and lawns?			
	c. Is the village willing to replace the present water intensive agriculture, gardens and lawns immediately?			
	Introduce Recycling			
	a. Does the village have effective water drainage system in the village basing on the bulk water usage and dispensation points?			
9	b. Does the village have water recycling opportunities in the village basing on the bulk water usage and dispensation points?			
	c. Does village practice first-in first-out method for retaining the quality of drinking water?			
	d. Does village practice counter current method of using Best Quality Water for Best Use Viz., drinking, bathing, gardening, and cleaning?			
	Plugging Leakages			
	a. Does the village intend to have ward-wise (area-wise) water watching team which stops the water wastage?			
10	b. Does the village have ward-wise (area-wise) water watching team which stops the water wastage?			
	c. Does the village adopt a method of geo tagging the water leaking points and app-based alerts of the plumbers to arrest water leakages and water stagnation-related challenges?			
11	Plantation			

e. Is the pond/lake the main source of Agricultural use ?			
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4. Consumption of water

Table 2 : Consumption of water in different age group

Consumption of water in litres in a Family*		Age>60	Age group 50-60	Age group 40-50	Age group 30-40	Age Group 30-20	Age Group 20-10	Age Group 5-10	Age Group 1-5	Infants
Summer	Per day									
Summer	Per Week									
Summer	Per Month									
Summer	Quarterly									
Monsoon	Per day									
Monsoon	Per week									
Monsoon	Per Month									
Monsoon	Quarterly									
Winter	Per day									
Winter	Per Week									
Winter	Per Month									

*Calculation may be made approximately

Table 4: Assessing Village Score in Water Conservation

2.1 Water Budget (source wise and bulk usage location wise)													
S No	Criteria	Day Wise(in 000s litres)			Week Wise(in 000s litres)			Month Wise(in 000s litres)			Quarterly(in 000s litres)		
	Water	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3
7.	Water Availability												
8.	Usage of Water												
9.	Water Quality												
10.	Rainwater Harvesting												
11.	Recycling												
12.	Village Initiatives												
Estimation of Yield of water from each Source of Water (1 point)													
	Source	Day Wise (in litres)			Week Wise (in litres)			Month Wise (in litres)			Quarterly (in litres)		
		Source 1	Source 2	Source 3	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3
Water Requirement													
	Estimated Requirement	Day Wise (in litres)			Week Wise (in litres)			Month Wise (in litres)			Quarterly (in litres)		
	Water	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3	Source 1	Source 2	Source 3
6.	Drinking												
7.	Bathing												
8.	Washing												
9.	Flushing												
10.	Agriculture and Horticulture and for other cultivation												
11.	Animal Husbandry, Poultry and other similar activities												



Source 1: Pipeline through gram panchayat

Source 2: Well, borewell and tubewell in the village

Source 3: Waterfall, stream, canal, village tank

5. Water Recharge Structures in the village

Table – : Capacity of storage tanks or underground recharge structure (in 000s litres)				
S No	Recharge	Storage	Capacity	Remarks
1.	Structure 1	Tank/lake/harvesting structure		
2.	Structure 2	Tank/lake/harvesting structure		
3.	Structure 3	Tank/lake/harvesting structure		
4.	Structure 4	Tank/lake/harvesting structure		
5.	Structure 5	Tank/lake/harvesting structure		
6.	Structure 6	Tank/lake/harvesting structure		
7.	Structure 7	Tank/lake/harvesting structure		
8.	Structure 8	Tank/lake/harvesting structure		
9.	Structure 9	Tank/lake/harvesting structure		
Total		Total		

6. Status of Surface water bodies in the Village

Table 5 - Village Surface water body status (10 points)

S No		YES(2)	NO(0)
1.	Is the water body Recharged by any fresh water stream?		
2.	Does the water body contain any fish?		
3.	Does the water body have floating solid waste?		
4.	Does the sewage/used water enter the water body?		
5.	Is the water body being encroached?		

25.	Does the village official ensure that the tanks are full beginning of each day?		
26.	Does the village estimate the consumption of water by end of the day?		
Total			

Water Conservation (20 points)			
S No	Criteria	Max Points	Scored
	Functional taps without leakage in the individual household toilets and other places in the village	5	
21.	Availability of functional taps (all points of use) in the individual household toilets, bath areas, community toilets, anganwadis, panchayat office or other places in the village		
22.	Availability of functional taps excluding household and community toilets and bath areas in the village-gardens, public areas		
23.	Are leaking taps reported immediately? Frequency of taps replacement		
24.	Investing on good quality taps (rust-proof, PVC). Tap Inspectors – frequency of visits		
25.	Do pipe leakages get immediate attention?		
	Network of water pipelines – inspection and observation for leakages	2	
26.	Weekly checking of water pipelines for leaks		
27.	Hygiene maintenance in water pipeline areas		
	Leakages impacting roofs and sidewalls in community buildings	3	
28.	Identification of leaking points on roofs and sidewalls		
29.	Experts/Engineers' Inspection and advice on impact of leaking roofs and sidewalls		
30.	Weekly repairs/ maintenance of leaking roofs & sidewalls		
	Feedback mechanism	3	
31.	Availability of feedback mechanism in all village community buildings for review		
32.	Periodic review of leaking taps, and plumbing fixtures from village residents		
33.	Assessing and implementing the complaints/suggestions received from village residents		
	Water Efficient Toilets in individual households and community		
	Toilets equipped with dual flush system	4	
34.	Flush tank has dual flush and efficient less than 6 ltrs		
35.	Flush tank has dual flush but inefficient more than 6 ltrs		

6.	Plant support with bio fertilizers and water support		
7.	Replacement plan for plantation		
8.	Controlled Bio pesticide administration		
9.	Drip irrigation		
	Total		

10 Recycling in Village

Recycling (30 points)		Max(3)	Score
11.	Is Sampling and analysis of wastewater done periodically?		
12.	Is there a plan for recycling wastewater in the village?		
13.	Is there a method for collection of used water for recycling?		
14.	Is grey water or non recycled water used for any purpose?		
15.	Is recycled water used for village agriculture purposes?		
16.	Is the recycling equipment well maintained?		
17.	Is the wastewater collected daily, weekly, monthly, annually?		
18.	Is the collected wastewater recycled daily, weekly, monthly, and annually?		
19.	What is the percentage of wastewater recycled?		
20.	Is wastewater of RO of public buildings used for other purpose?		

Administration (20 points)			
S No	Criteria	Max Points	Scored
	Dedicated Staff for Water Maintenance	4	
5.	Availability of adequate staff - men and women for maintenance Is any village representative allotted the task of monitoring all water issues?		





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