ICFAI Foundation for Higher Education
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SDG-6 Report

6 Clean Water and Sanitation

Ensure Access to Water and Sanitation for all

ICFAI Foundation for Higher Education (IFHE), Hyderabad

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ICFAI Foundation for Higher Education

Report on

Clean Water and Sanitation (SDG 6)

Ensure availability and sustainable management of water and sanitation for all

Preamble

Sustainability encompasses a paradigm shift in thought, behaviour, and operations that strives to fulfil the requirements of current generation while safeguarding the capacity of resources to sustain future generations. The following are some essential aspects:

Social and Environmental Responsibility: Preserving natural resources, minimizing environmental damage, and minimizing carbon footprints are the primary objectives of sustainable practices.

Social equity: It is the practice of ensuring that all communities and individuals are treated fairly and equitably, and that decision-making processes take social justice and inclusiveness into account.

Economic viability: Sustainability aims to establish long-lasting economic systems that strike a balance between profitability and the adverse social and environmental consequences.

Innovation and adaptability: The adoption of innovation and adaptability is of utmost importance in order to discover novel resolutions to preexisting challenges and effectively respond to evolving conditions.

Holistic approach: A holistic approach to decision-making entails taking into account the interdependencies among social, environmental, and economic factors.

Education and awareness: Advocating for education and raising awareness regarding sustainability contributes to the development of a responsible society and facilitates constructive transformation.

The university believes that through the implementation of sustainable practices across multiple domains, including resource management, policy formulation, business operations, and lifestyle selection, it is possible to strive for a more harmonious and balanced world that benefits both current and future generations.

Clean Water and Sanitation

The university has a Clean Water and Sanitation policy (https://www.ifheindia.org/times-higher-education) in place and is implemented.

Sprinkler Irrigation @ IFHE
(https://www.ifheindia.org/times-higher-education#gallery-1)

Water Availability and Consumption

ICFAI Foundation for Higher Education is committed to Clean Water and Sanitation, and thus contribute to the achievement of Sustainable Development Goals. The university proactively promotes and practices indicators required for clean water and sanitation by adapting different parameters and measuring the university's performance over a period of time. The university draws 120kl potable water from the municipal corporation and extracts 1500kl through bore-wells. The university measures and monitors total water consumption as well as consumption per capita.

Waste Water Treatment

The university has efficient and effective sewage water treatment plants of 900kl and 100kl capacity, which generate 700 to 800kl treated water per day. The capacity of STP plant is being enhanced to 1600 kl. The project is expected to the completed by this year end. This water is

used for watering plants, maintenance of gardens, etc. Excess water is pumped into an artificial pond within the campus for recharging the ground water.

Recharging of Ground Water

Ground water is also recharged with 14 rain water harvesting pits in the campus. This in addition to recharging through artificial pond. These measures help us sustain ground water resources.

Rain Water Harvesting Plant
(https://www.ifheindia.org/times-higher-education#gallery-2)

RO Plants

The campus has 17 RO plants of different capacities, which are maintained by the engineering staff regularly.

Minimizing the Water Usage

The university has taken several steps to minimise water usage, keeping in view the sustainability requirements. Modern technologies such as water pressure control, faucet aerators, leak detectors, water-saving toilets, etc. are used. Each of water dispensing areas have the stickers for exhorting the need to save water.

Water Re-use

The university uses recycled water to recharge the ground water as per the Water Conservation Policy (https://www.ifheindia.org/times-higher-education).

Water Extraction Technologies

The university uses sustainable and impact making water extraction practices. Daily usage of water is managed through gravity feed by overhead tanks. Natural water is put through Reverse Osmosis process to make it healthy and consumable water.

IFHE practices sustainability in water resources, by treating wastewater physical and biological processes to convert it into harmless water for sustaining the greenery on the campus.

By recharging the ground water thorough 14 rain water harvesting pits in the campus, on the natural slopes that create catchment areas for the rain water, ground water is accumulated and recharges. This helps in self-sustaining in water resources.

Clean water

The university provides clean drinking water to all the students, research scholars, faculty members, administrative staff, families residing on the campus, etc.

Water Cooler
(https://www.ifheindia.org/times-higher-education#gallery-3)

Buffer Storage Tank
(https://www.ifheindia.org/times-higher-education#gallery-4)

Sanitation

Sanitation facilities are managed by a team of professionally trained workers. All necessary materials for keeping the sanitation facilities neat and clean are provided. In addition, staff members are trained on sanitation from time to time.

Research and Publications

The faculty members of the university publish valuable research in SCOPUS and Web of Science indexed journals.

A search using key words yielded A search on 'water research' yielded the following 27 published research papers during calendar year 2023 (Refer Annexure).

RO Plant
(https://www.ifheindia.org/times-higher-education#gallery-5)

Aeration Tank
(https://www.ifheindia.org/times-higher-education#gallery-6)

Collaborations

The university is currently forging collaborations with government, NGOs and industry to promote best practices both within the campus and also off the campus in the area of clean water and sanitation.

Overhead Water Tank
(https://www.ifheindia.org/times-higher-education#gallery-7)

Conclusion

The university believes in and practices sustainable clean water and sanitation policies. It deploys modern methods of using water to conserve water resources, it uses water conservation policy by using artificial pond, rain water harvesting pits, economizes water in all its operations, promotes water conservation through outreach programs and contributes to water conservation in the community by investing in water conservation.

STP Control Room
(https://www.ifheindia.org/times-higher-education#gallery-8)

Annexure* List *of Publications Related to Ensure availability and sustainable management of water and sanitation for all (SDG 6)

Sl. No.	Authors	Title	Year	Source title	Volume	Issue	DOI	Link
1	Ahmad M.T.; Firouz M.; Srivastava N.K.	Dynamic coal blending under sustainability concerns: a case study from the Indian steel industry	2023	International Journal of Quality and Reliability Management	40	9	10.1108/IJQRM-08-2022-0261	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85147509651&doi=10.1108%2fIJQRM-08-2022-0261&partnerID=40&md5=e2da0f4c648d731d417c64db7635f4cf
2	Sahu S.B.B.P.J.; Nayak S.; Sahu S.; Mohapatra J.; Khuntia S.K.; Sahoo P.K.; Samal P.; Patra S.K.; Swain S.; Nayak B.B.	Extraction and Characterization of Natural CASCABELA Thevetia Bast Fibers: A Potential Candidate as Reinforcement in Epoxy Composites	2023	Journal of Natural Fibers	20	2	10.1080/15440478.2023.2272215	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85174864302&doi=10.1080%2f15440478.2023.2272215&partnerID=40&md5=6c3620d52a47d76fe2de119f77bbdfc8
3	Murala D.K.; Panda S.K.; Sahoo S.K.	Securing Electronic Health Record System in Cloud Environment Using Blockchain Technology	2023	Intelligent Systems Reference Library	237		10.1007/978-3-031-22835-3_4	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85151502042&doi=10.1007%2f978-3-031-22835-3_4&partnerID=40&md5=e3e1e83d1267eb5bfa0920cf6b499102

Sl. No.	Authors	Title	Year	Source title	Volume	Issue	DOI	Link
4	James A.T.; Asjad M.; Panchal R.	Purchase decision making of garage equipment using an integrated fuzzy AHP and grey relation analysis method	2023	Grey Systems	13	2	10.1108/GS-05-2022-0047	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85140970735&doi=10.1108%2fGS-05-2022-0047&partnerID=40&md5=513f5381256853bad57303976d300a3e
5	Jayaseelan G.A.C.; Surenderpaul A.; Selvam T.T.; Anderson A.; Senthilkumar A.; Malladi A.; Venkatesh R.; Aneesh V.N.; Saravanan R.	Assessment of solar thermal monitoring of heat pump by using zeolite, silica gel, and alumina nanofluid	2023	Clean Technologies and Environmental Policy	25	9	10.1007/s10098-023-02558-4	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85163279664&doi=10.1007%2fs10098-023-02558-4&partnerID=40&md5=082a6f77236df9169063e5675cad24b8
6	Gopalakrishnan T.; Saravanan R.; Malladi A.; Manikandan R.; Jagadeeswaran P.; Anbuchezhiyan G.; Ganesh M.	Effects of Molybdenum disulfide nano-particles' concentration on waste cooking oil nanofluid in reduction feed force in CNC wet machining of SAE 1144 steel	2023	Materials Today: Proceedings			10.1016/j.matpr.2023.03.442	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85151279674&doi=10.1016%2fj.matpr.2023.03.442&partnerID=40&md5=ca2e976f21152a8465fe1f4c111c52de

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7	Vara Prasad H.D.; Giri L.I.; Midya K.	MAGeI3-Based Multi-Dimensional Perovskite Solar Cells for Superior Stability and Efficiency †	2023	Engineering Proceedings	56	1	10.3390/ASEC2023-15927	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85186427197&doi=10.3390%2fASEC2023-15927&partnerID=40&md5=37f6166a686cd75a989dc385b4e5bdd8
8	Venkatesh R.; Santhosh Kumar P.C.; Senthilkumar A.; Krishna J.P.; Chandramohan P.; Aneesh V.N.; Malladi A.; Priya C.B.; Ramaraj E.	Mechanical Interlocking Approaches to the Prediction of Mechanical and Tribological Behavior of Natural Fiber-Reinforced Polymer Hybrid Nanocomposites or Automotive Applications	2023	Advances in Polymer Technology	2023		10.1155/2023/6685060	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85168770581&doi=10.1155%2f2023%2f6685060&partnerID=40&md5=604077c7edaf2f91a1342db5bd9902fe
9	Sethy S.K.; Majhi A.; Brahma G.S.; Swain T.	Thermal analysis of nano-crystallite phosphate containing composite paint enables for energy storage materials	2023	Inorganic and Nano-Metal Chemistry	53	6	10.1080/24701556.2023.2165689	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85147010638&doi=10.1080%2f24701556.2023.2165689&partnerID=40&md5=ac3b5f873f1898ef7343ecbcbeaeffe4
10	Accouche O.; Gangadhari R.K.	Optimizing Decision-Making of A Smart Prosumer Microgrid Using Simulation	2023	Computers, Materials and Continua	76	1	10.32604/cmc.2023.038648	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85164275039&doi=10.32604%2fcmc.2023.038648&partnerID=40&md5=aa0e336e92a942a5d1d2736b3203e3e6

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11	Chatterjee S.; Afshan N.; Chhetri P.	Career decisiveness: the role of motivational factors and career planning attitudes	2023	Journal of Applied Research in Higher Education	15	4	10.1108/JARHE-03-2022-0107	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85139479282&doi=10.1108%2fJARHE-03-2022-0107&partnerID=40&md5=7dd9501f110ff71ceb9b9eb7e4bc88d7
12	Manchala S.; Gandamalla A.; Rudrarapu A.	Biodegradable Nanocelluloses for Removal of Hazardous Organic Pollutants from Wastewater	2023	Handbook of Biodegradable Materials			10.1007/978-3-031-09710-2_29	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85161184490&doi=10.1007%2f978-3-031-09710-2_29&partnerID=40&md5=2d0e95a63a1cdc3c03d64dfe19874aa7
13	Saiteja S.; Ponnapalli V.A.S.	A review on smart water management in various domestic areas: an approach for water consumption and leakage perspectives	2023	International Journal of Critical Infrastructures	19	1	10.1504/IJCIS.2023.10036773	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85149033564&doi=10.1504%2fIJCIS.2023.10036773&partnerID=40&md5=aac0cc9e9d2083520c742595d883381f
14	Srivastava N.K.; Dhiman A.; Kedia N.; Ravindran R.S.E.; Saxena S.; Varma P.	Enhancing Decision Making Through Smart Predictive Analysis Using AI	2023	2023 3rd International Conference on Smart Generation Computing, Communication and Networking, SMART GENCON 2023			10.1109/SMARTGENCON60755.2023.10442706	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85187564563&doi=10.1109%2fSMARTGENCON60755.2023.10442706&partnerID=40&md5=dfd1e507305d8fca5c4882314c4b7c93

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15	Islam S.; Rani P.J.; Sreeram A.; Jweeg M.J.; Kumarasamy M.; Singh D.P.	Block chain Based Temperature and Interactive Control Strategy Implementations for Industry Applications	2023	2023 3rd International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2023			10.1109/ICACITE57410.2023.10182633	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85178289069&doi=10.1109%2fICACITE57410.2023.10182633&partnerID=40&md5=b83c50029d7eee675aea2a5b9583a401
16	Saravanan R.; Malladi A.; Amuthan T.; Aneesh V.N.; Jerin A.; Anbuchezhiyan G.; Saikumar A.	Mechanical characterization of friction stir welded dissimilar aluminium alloy using Taguchi approach	2023	Materials Today: Proceedings			10.1016/j.matpr.2023.03.278	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85151398383&doi=10.1016%2fj.matpr.2023.03.278&partnerID=40&md5=13dc27d9a9491265c81ba8a0c15b1a29
17	Hanumanthakari S.; Gift M.D.M.; Kanimozhi K.V.; Bhavani M.D.; Bamane K.D.; Boopathi S.	Biomining method to extract metal components using computer-printed circuit board e-waste	2023	Handbook of Research on Safe Disposal Methods of Municipal Solid Wastes for a Sustainable Environment			10.4018/978-1-6684-8117-2.ch010	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85167710373&doi=10.4018%2f978-1-6684-8117-2.ch010&partnerID=40&md5=07c095ce21774ac6e5b0a024f112c02f
18	Pandey M.; Yadav P.S.	Understanding the role of individual concerns, attitude, and perceived value in green apparel purchase intention; the mediating effect of consumer involvement and moderating role of generation Z&Y	2023	Cleaner and Responsible Consumption	9		10.1016/j.clrc.2023.100120	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85152903335&doi=10.1016%2fj.clrc.2023.100120&partnerID=40&md5=853771a8a07c674b706edb54c8f6ffd2

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19	Sahu S.; Sahu S.B.B.P.J.; Nayak S.; Mohapatra J.; Khuntia S.K.; Malla C.; Samal P.; Patra S.K.; Swain S.	Characterization of natural fiber extracted from Bauhinia vahlii bast subjected to different surface treatments: A potential reinforcement in polymer composite	2023	Journal of Natural Fibers	20	1	10.1080/15440478.2022.2162185	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85145431954&doi=10.1080%2f15440478.2022.2162185&partnerID=40&md5=669718d1a4ed4289e31182bb65702527
20	Saravanan R.; Malladi A.; Gopalakrishnan T.; Manikandan R.; Jagadeeswaran P.; Anbuchezhiyan G.; Veeranjaneyulu K.	Investigating concentration of nano-particles influence in Molybdenum disulfide waste cooking oil nanofluid for machining of SAE 1144 in surface finish enhancement	2023	Materials Today: Proceedings			10.1016/j.matpr.2023.03.441	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85151437338&doi=10.1016%2fj.matpr.2023.03.441&partnerID=40&md5=23b0ed4a4a3c91f3f3fbd94c66babca6
21	Gautam V.; Bhalla S.	Why residents exhibit environmentally responsible behavior?	2023	Journal of Cleaner Production	427		10.1016/j.jclepro.2023.139253	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85174348726&doi=10.1016%2fj.jclepro.2023.139253&partnerID=40&md5=67939891de0ac95b9de2956db4d7475a
22	Varaprasada Rao K.; Panda S.K.	A Design Model of Copyright Protection System Based on Distributed Ledger Technology	2023	Lecture Notes in Networks and Systems	459		10.1007/978-981-19-1976-3_17	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85140729061&doi=10.1007%2f978-981-19-1976-3_17&partnerID=40&md5=9233388bcb1021d668f402a5d15ffd8f

Sl. No.	Authors	Title	Year	Source title	Volume	Issue	DOI	Link
23	Chahar R., Mukherji R., Das Mukherji M.	Importance of Macrophytes-Biofilm Interaction for Abating Pollution in Natural Wetlands: A Review	2023	Indian Journal of Environmental Protection	43	9		https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85176452579&partnerID=40&md5=11e35f0a445593923fa8de5abff9240a
24	Dey P., Deb N., Roy S., Das D.	Variations in water quality and their impacts on mechanical properties and microstructure of cement-based building materials	2023	Innovative Infrastructure Solutions	8	9	10.1007/s41062-023-01194-7	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85169114950&doi=10.1007%2fs41062-023-01194-7&partnerID=40&md5=1f9b862d576191809442a4ed74b1451c
25	Dadhich M., Rathore S., Gyamfi B.A., Ajibade S.-S.M., Agozie D.Q.	Quantifying the Dynamic Factors Influencing New-Age Users' Adoption of 5G Using TAM and UTAUT Models in Emerging Country: A Multistage PLS-SEM Approach	2023	Education Research International	2023		10.1155/2023/5452563	https://www-scopus-com-ifheiindia.knimbus.com/inward/record.uri?eid=2-s2.0-85178433914&doi=10.1155%2f2023%2f5452563&partnerID=40&md5=2833aa8987930c3bb054ecb2008087a8
26	Tudu, Preshita Neha; Mishra, Vaibhav	An Eco-Friendly Alternative to Plastic Cutlery and Food Packaging: A Case of Ecoware in India	2023	ASIAN JOURNAL OF MANAGEMENT CASES			10.1177/09728201231190189	http://dx.doi.org/10.1177/09728201231190189

Sl. No.	Authors	Title	Year	Source title	Volume	Issue	DOI	Link
27	Pandey, Mithilesh; Yadav, Pinnika Syam	Understanding the role of individual concerns, attitude, and perceived value in green apparel purchase intention; the mediating effect of consumer involvement and moderating role of generation Z&Y	2023	CLEANER AND RESPONSIBLE CONSUMPTION	9		10.1016/j.clrc.2023.100120	0

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