KVWMRI INTRODUCTION

athmandu Valley Water Resource Management Initiative

"The Holistic WRM Strategy with an Integrated Collaborative Approach for the KTM Valley Long Term Sustainability"

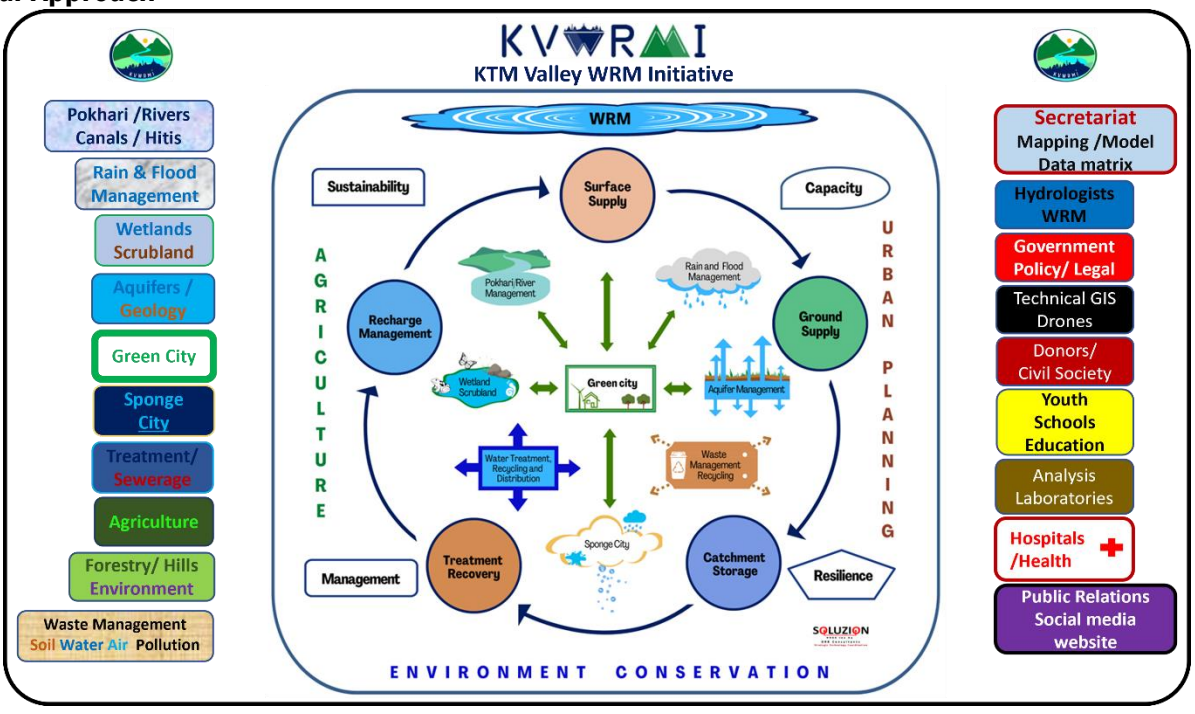
Why the KVWRMI?

Water resource management requires an holistic approach. No singular component can solve sustainability of water management for a growing city environment. Most cities are built around rivers that arrive from hundreds of kilometers of watershed. Kathmandu City is confined within a valley with no natural outside river sources, being totally reliant upon all that derives from within the limited water shed, which includes ten river sources from the surrounding hills and aquifer access plus seasonal rainfall. To ensure the fast-growing City remains sustainable, robust and with a long-term resilient viability, the limited water access needs to be maximized and contribute to numerous components for 21st century expectation within climate change with economic and population growth.

The main objectives of the proposed project are to

- Enhance the community, local and valley and urban climate change resilience and sustainability to water access diminishment, caused by:
  - floods and droughts, domestic and commercial development and various counts of insufficient capacity and finance, mismanagement, through
  - ignorance, lack of expertise or conflicting interests, potentially adversely affecting the long-term City and Valley water resources for Kathmandu with dire consequences.
- This holistic initiative intends to identify & develop integrated strategy for the core elements contributing to KTMV sustainable water resource management and environmental resilience.

A Modular Approach



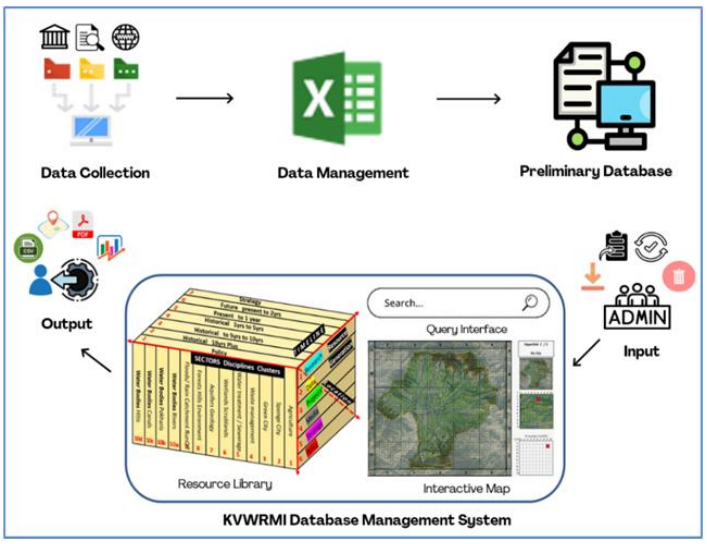
Objective Outcomes

- Generating a cohesive, integrated and collaborative engagement between all contributive components and stakeholders, generating a sustainable and resilient water resource management strategy with their set of field operations objectives and deliverables.



Priorities:

- To build matrix library of all existing, past and proposed projects, Initiatives, Research Papers, Books, Publications and Policy docs.
- To be readily available to researchers and project implementation management
- Minimising duplication and to help identify gaps



*The **KVWRMI Library** is intended to be made available as a resource tool for water resource management strategies including risk assessment, mitigation and efficiency development, as well as integrated best practices associated with climate change, water security challenges, disaster risk reduction, which will be useful as a foundation framework for policy development and research, all of which will contribute to the long-term sustainability and economic development of the Kathmandu Valley.*

Why is the Resource Library important?

The Resource Library will comprise a "collective resource" using technology and information provided by cluster specialists, as well as data from research, policy development, and educational practice. Thus, we aim is to integrate with other directory and system of libraries already in existence.

Stakeholder Inclusivity @Community level:

- Enhance community and household level for
  - flood resilient water harvesting,
  - sponge city recharge and
  - general management of Traditional water Pokharis facilities, neglected and encroached (using innovative techniques) including pollution mitigation
  - strengthen capacities to plan, construct, operate, enhance existing and maintain and replicate these initiatives across the Valley.

Inc: Municipalities/ Government Policy Depts

- Enhance city and district-level water harvesting and management facilities in and around public buildings and
- maximising water storage in Pokharis, public Parks gardens, by developing district / city-level spatial strategies as tools to assess, adapt to opportunities & mitigate climate change.

Who Else?

- **Civil Society and Corporates** INGOs and NGOs; Community Groups; Specialists and Research facilities need be embraced and encouraged to create ownership within elements of the WRM strategy contributing to all of the core components.

Also Embracing and developing Primary Components within policy protecting Gov depts autonomy equally with integrated collaboration. Working closely with UN, Donor Agencies, *Youth and Education*, Corporates, Banks & Government ministries and depts to sustain fiscal need & viability

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'Respect Water Campaign'

Primary/ Secondary Schools - Colleges - Gumba – Youth Groups - Universities

Kathmandu Valley has developed as a group of Towns over the past centuries, accelerating during the previous 40 years with urbanisation, confinement of ten rivers, population explosion, increased water extraction demands and lack of coherent waste management strategy, leading to water flow blockages, encroachments upon flow and contamination of flow. All of this contributes to potential enhanced flooding and wasted resources and general deterioration of water resource bodies quality and accessibility.

The Respect Water Campaign – Begin with Schools

Outside of the curriculum lays a vast array of knowledge, that whilst not always formally taught during daily classes, remain crucial to pupils as they approach their higher education and emergence into the adult world of work, responsibilities, family and survival in a fast changing world of economics, environment and climate. Within Kathmandu Valley, its' society is facing an uncertain future of sustainability and resilience. The Youth are the future and key to the necessary change. Allow them to become part of the solution, for that we need arm them with the necessary 'hydrosocial' knowledge and 'water literacy' skills to contribute and to generate innovation and positive exploratory and applicative initiatives, such as 'Biosphere Reserves', Biomes, Biospheres, and Hydroponics, Aquaponics, Green City, Sponge City, plus Climate Resilient Agriculture with Roof top and Green House strategies.

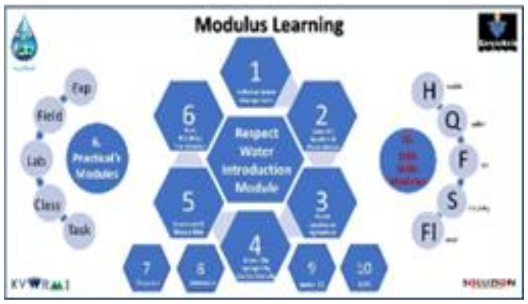
The following campaign of modular subject matter is offered as independent components either integrated as consecutive program or taken piecemeal as priorities dictate and as individual education establishments and authorities wish to embrace and package incrementally. All subject matter is designed to prepare and enhance a young person's contribution to a better world, with respect for the environment and the critical resource of Water.



Purpose: Introducing Pupils, Students and Children and Teachers, through to families, to the Need to Respect Water. To understand the importance of and role of water across society and within our environment. Encouraging participation via discussion, observation, taskings, projects, initiatives and experiments, all in a pyramid modular system for developing knowledge, contribution and achievement within the education sector and community.

"The sooner that you can generate the young person's thought processes as to the challenges, the sooner they will develop and assist in the ownership of the solutions, thus providing the much sought after Sustainability and Resilience"

The program is modulated embracing various components to meet the individual presentation and participation needs of grades 1 to 12. An interactive approach is proposed with various practical option features to ensure inclusivity and pupil contributions including: experiments, field activities, laboratory demonstrations, class activities such as Posters, stories, songs and creation of games; in addition various optional tasking can be generated which will encourage pupils to personally participate activating accreditation and rewards badges for individual contributory achievements.



'Karyashala' **STEAM Education Consultants**

Collaboration

With over 1500 schools & colleges across the KTM Valley its necessary to generate collaborations and specialist contributions to present individual modules and their components. The KVI team along with '***Karyashala'*** will be coordinating associated specialists and agencies to cooperate in the presentation of individual modules and their specific components to Grades and pupils and teachers, assisting with practicals within schools and in the field. It is necessary to also engage with the Government authorities of advisory groups /individuals, plus Parent Teacher Associations and INGO / NGO Education Agencies Mayors' offices and expert water resource management groups.



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The historical practices of water resource management require recovery, having been neglected, forgotten and indeed disrespected. Recovering and enhancing the Pokharis and Hitis across the city and development of wetlands and run off control throughout the valley will help secure the long-term sustainability for future generations, essential if we are to build resilience to the consequence of climate change and a desired economic growth.

From the peripheries of the KTM Valley, water resources need be managed if to maintain sustainable supplies. 1 to enable feed water to be siphoned and distributed into supply mechanisms without excessive filtration, before polishing. And secondly to avoid a potential deluge of debris and floods experienced elsewhere in Nepal in 2021. Consequently, activities beyond the city boundaries are crucial to monitor and understand as contributory as potential hazardous to KTM water resource management. Deforestation at various levels has been a persistent contributory problem combined with a variety of environmental anthropogenic causes in Nepal, including fast settlement expansion, agro-industrial expansion, consumption of wood for domestic fuel, logging and inadvertent forest fires. However, in the AFOLU By 2030, intention is to maintain 45% of the total area of the country under forest cover (including other wooded land limited to less than 4%). Separate goals will need be established for the KTM valley.

In order to initiate a practical and sustainable water resource management strategy within the KTM Valley, it is essential to start simultaneously with the upper hydrology unit zones of the ten river feeds into the valley. Floods are primarily initiated from outside of city, however exacerbated within communities by mismanagement. Some contaminations are inherent commencing from beyond the valley. Debris flows are potentially initiated from hills and activities outside of the urban sprawl. Shortages caused by climate change, drought and blockages need be addressed outside of and within the city limits. Consequently, understanding the feed mechanisms are essential if we are to generate sustainable water quality supply for KTM.

Join us in a Collaborative approach between Science, Citizen Science, Schools, Colleges, Universities, Industry, Municipalities and Ministries, to Promote Water Respect, Water Resource Management, KTM Water Security and Sustainability, KTM Valley Resilience to Climate and Environmental Change, empowering long term robust Economic Growth and Prosperity. Meeting Room facilities, serviced, ideal for Seminars to 15 persons.

Permanent KVWRMI Exhibit Display. WRM consultations surgeries by appointment. Café, Restaurant facilities.

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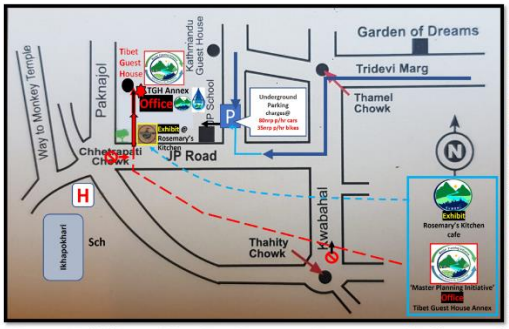
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Poster Exhibit - Meeting Room - Rosemary Kitchen and Café - Chhetrapati Thamel

Water Surgery's - Workshops - Collaborations - Counselling - Meetings

Master Planning Initiative

Policy Research Advocacy Hub

MPI