

C4Y-IWP WATER CHAMPIONS YOUTH FELLOWSHIP PROGRAMME 2019

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Final Report

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Non-Profit Partners



Acknowledgement

This Report is an output of collaboration between Centre for Youth (C4Y) and India Water Partnership (IWP). This activity was supported by India Water Partnership under Core Program: Goal 2 – General and Communicate Knowledge. The C4Y-IWP Water Champions Youth Fellowship Programme 2019 was possible because of the outstanding collaboration with all the fellows, partners, mentors and supporters. We would like to acknowledge and express our heartfelt gratitude for making the inaugural edition of the Fellowship Programme a success.

We would like to convey our earnest indebtedness to India Water Partnership team for believing in the partnership and the programme. Special thanks to the entire team of IWP.

Our NGO partners - Development Alternatives, ICLEI South Asia, Indian National Trust for Art and Cultural Heritage (INTACH) and Tree Craze Foundation deserve special acknowledgment for mentoring the Fellows and facilitating in developing the water smart solutions.

Each fellow's perspective, efforts and willingness to adapt to diverse learning situations is noteworthy and highly applauded by the team.

We would like to acknowledge C4Y team to go beyond the bounds of the project to achieve the intended and unintended outcomes.

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EXECUTIVE SUMMARY

Sustainability and Youth

Youth population in India is expected to reach 34% of its total population in 2020. Youth have a huge potential for innovation and their voice has to be taken into account. Dissemination of proper water education to masses in general and the youth in particular could be useful in addressing the issues related to environment conflict, climate change and sustainable development. Sensitisation and education of youth about water concerns and related issues imbibe a sense of responsibility among young population for managing the water resources towards the goals of sustainability and self-reliance. In order to ensure that the actions made towards sustainable development including water management the inclusion of a dedicated water goal like the SDG-6 (water security for sustainable development in an increasing water stressed world) becomes important.

To foster and empower Sustainable Youth Leadership in the country, and build their capacities on developing sustainable solutions for water security, Centre for Youth (C4Y) and India Water Partnership (IWP) collaborated to initiate “C4Y-IWP Water Champions Youth Fellowship Programme 2019”. A six month intensive Fellowship was aimed at empowering young leaders by providing them with relevant and comprehensive work experience in the water sector. The Fellowship programme was also aligned towards with the GWP’s Youth Strategy: “unite and strengthen voices of youth for a water secure world”. This activity is an added step towards building awareness on efficient water management for the next generation leaders.

The initiative was focussed on students pursuing bachelor and master degree in subjects related to environment, sustainability or water issues in universities across Delhi and National Capital Region (NCR).

NGO Partners and Water Smart Solutions

Development Alternatives, ICLEI South Asia, Indian National Trust for Art and Cultural Heritage (INTACH) and Tree Craze Foundation were the prominent sector specialist organisations who partnered for the 2019 Fellowship Programme. Except INTACH, all the organisations are also IWP network partners. The Fellows were placed with the partners and the mentors facilitated the process of development of Innovative ‘Water Smart Solutions’ by the Fellows on issues such as lake conservation, accessibility to safe drinking water for low income families and developing awareness tools for Delhi and NCR.

Communication and Documentation Collaterals

The Fellowship ventured beyond developing Water Smart Solution and the team worked with the Fellows on building their capacities in documenting and communicating the learnings and the experiences of the journey as well the concepts of water smart solutions. Project briefs, and communication & documentation collaterals (blogs, case studies, photo slides, short films and, info-graphics) and the final reports were prepared by the Fellows to highlight the innovative solutions developed and implemented during the Fellowship.

The Felicitation Ceremony was held on Wednesday, December 18, 2019 for demonstrating innovative solutions, sharing takeaways from the learning process & experience, followed by awarding of completion certificates and stipend for the Fellows.

Experiential Learning

During the Fellowship, the empanelled Fellows have gone through an exponential learning curve in terms of knowledge and experience on water issues & concerns, gained from mentorship support for strategising and executing their ideas. The Fellows also explored their strengths and leadership potential over the course of the programme.

1.0 PURPOSE

The programme engaged the youth for a six month Fellowship with the partner organisations who have been working in the water resource management sector. The key objectives of the inaugural edition of the Fellowship programme were as follows:

- **To understand India's water concerns:** Raise awareness and social consciousness on India's pressing water concerns
- **To engage with existing problems and solutions:** See first-hand problems and strategies to deal with the water exigency in the country
- **To evolve as aspiring young leaders:** Develop leadership skills and innovations among youth in ideating for water smart solutions
- **To support partner organisations:** Contribute positively in the partner organisation's working processes on water related concerns
- **To implement on-ground projects:** Execute the innovative ideas and solutions in consultation with the partner organisations

2.0 RESULTS

This section will encapsulate the results and changes that have taken place during the time of the activity intervention.

2.1 Narrative Reporting on Results

The journey of the five Fellows from their selection process followed by the orientation workshop on water issues and placement with partner organisations and the mentoring support, working professionally on water conservation issues and developing or implying water smart solution has been an impact driven change process for the young Fellows.

The Fellows were students pursuing bachelor and master degree in environmental studies, environmental management and B.Tech (Environmental Engineering) from Delhi University, Guru Gobind Singh Indraprastha University and Delhi Technological University. Their understanding on the issue of water very academic and the practical orientation on the water conservation was a challenge to begin with. The details of the cohort 1.0 of 2019 Fellows are appended as Annexure I.

However, their keen desire to share ideas with others, be challenged and inspired, and the willingness to face obstacles and come up with solutions for the way ahead was a major motivation for the team to work with these young leaders to achieve the aim and objectives of

the 2019 Fellowship programme. Following factors contributed immensely in getting the desired programme results:

- I. The programme design and implementation process was very instrumental in the overall framework. The *Orientation Workshop* was conducted for the Fellows on providing them with the overview and context of water sector in the country especially of Delhi and NCR. The partner organisations provided professional mentorship and project briefing for analysis of the project's progress to the fellows. *Meetings* were organised with mentors from the partner organisations and academic heads of the represented educational institutions to share the project ideas of the Fellows to work on. Two *Progress Mapping Workshops* were held with Fellows and non-profit partners to reflect on their project work and share experiences.
- II. Additionally, aligning with the prominent sector specialist organisations was critical. The partnership with Development Alternatives, ICLEI South Asia, Indian National Trust for Art and Cultural Heritage (INTACH) and Tree Craze Foundation for placement of the Fellows and facilitating the process of developing Innovative 'Water Smart Solutions' for Delhi and NCR by the Fellows was very pertinent to the overall success of the programme. Most of them are network partners of IWP.
- III. The Fellowship ventured beyond developing Water Smart Solution and the team worked with the Fellows on building their capacities on documenting and communicating the learnings and the experiences of the fellowship journey as well the concepts of water smart solutions. The fellows were asked to develop the guidelines for the communication and documentation collateral and be responsible for one of the collateral of all the Fellows. Anjali Yadav prepared the draft guidelines for the photo slides. Kiran Khokhar drafted the guidelines for developing the case studies and Shaivya Rohella developed draft guidelines for the short films. Overall, blog post, case studies, photo slides, brief info-graphic narrative and, a report of each fellow on water smart solutions were progressively developed over the course of the programme, which were not planned and anticipated in the initial planning of the Fellowship.
- IV. The brief narrative report of each Fellow presented through info-graphic along with the Fellow's bio-sketches has become a good narrative tool in the Fellowship journey and is being used for disseminating the results.

2.2 Outcomes

The 2019 Fellowship has contributed immensely in:

1. Developing Sustainable Youth Leadership in the country;

2. Nurturing of confident future leaders;
3. Holistic exposure to youth;
4. Empowering youth for creating a sustainable future; and
5. Infusing unique and fresh perspectives in the partner's organisation projects and their work process.

The main beneficiaries of the programme were students pursuing courses in universities across the Delhi-NCR on water related subjects. Fellows got a 360-degree on ground exposure to water concerns and solutions as they learnt and implemented new skills.

The other key beneficiaries of the programmes were the organisations with whom the fellows were placed during the fellowship.

The long-term impact of the fellowship programme would be on the non-government organisations, sector specialists, government organisations, academia and research institutions which will be benefited with empowered youth, innovative water smart solutions and communication collaterals on the Fellowship.

2.3 Outputs

1. Outreach to 300 college students
2. More than 30 specialised educational institutions were engaged in the outreach process
3. 53 applications received
4. Five Fellows selected
5. Five innovate water-smart solutions developed by Fellows
6. Five Case Studies developed
7. Five Photo Slides and Info-graphic Narratives prepared
8. Ten Blog post developed
9. Holistic 360 degree on-ground exposure to water concerns and solutions
10. Key partners of the project who supported the interventions: (i) Development Alternatives, (ii) ICLEI South Asia, Indian National Trust for Art and Cultural Heritage (INTACH) and (iii) Tree Craze Foundation

3.0 DELAYS IN IMPLEMENTATION, CHALLENGES, ESSONS LEARNT & BEST PRACTICES

The Fellowship was conceived to be a 14-weeks intensive placement and training programme, however the Fellowship was extended up to six months. The Fellows worked for regularly two months with the partner organisations and in the latter half of the Fellowship, they worked offline due to their academic schedule and with extensive handholding from the Fellowship team.

As the entire Fellowship programme was an organic process and it was in its evolving phase, the timeline was extended beyond planned weeks for the Fellows to understand, absorb and challenge the concepts & ideas and document the results and learnings outcomes.

4.0 RESPONSIBLE AND SUSTAINABLE YOUTH LEADERSHIP IN THE COUNTRY

The inaugural edition of 2019 Fellowship programme was launched with five Fellows in Delhi, India to build their capacities to understand & appreciate the issues of water conservation. The capacity building & practical orientation, mentoring, contributing in proposing water smart solution, monitoring, documenting and communicating the learnings were the key ingredients for the success of this programme. The Fellows worked on the following innovative Water Smart Solutions:

1. Cohort 1.0 Fellow Anjali Yadav leveraged on Integrated Urban Water Management (IUWM) principles and Sustainable Water Management in the City of the Future (SWITCH) toolkit process to support the rejuvenation of Bhalswa Lake located in North-west Delhi.
2. Cohort 1.0 Fellow Deepa Sharma contributed in development of a questionnaire to assess water awareness among school children at primary, secondary and higher level. With this issue in mind that, 'Water and Environment Quest for School and University Students' is one such effort intended to increase participation amongst school and university students for the Jal Shakti Abhiyan of Government of India.
3. Cohort 1.0 Fellow Kiran Khokhar proposed a plan for the Revival of the Hauz-i-Shamsi Lake located in South Delhi, which is based on the replication efforts made for rejuvenation of the Hauz Khas Lake by INTACH using tertiary treated water from Vasant Kunj Sewage Treatment Plant (STP).
4. Cohort 1.0 Fellow Nidhi Dahiya worked on lab testing of Transparent Jerry Can, a cost effective and easy to use disinfectant which works on the principle of Solar Water Disinfection for access to safe drinking water.
5. Cohort 1.0 Fellow Shaivya Rohella worked on Jal TARA Filters to create innovative solutions in the field of water purification, management and improving drinking water quality. The Jal

TARA community Bio-sand Filter is identified as the perfect approach to address both issues of water accessibility and water quality

The info-graphics on 'Water Smart Solutions for Delhi and NCR' proposed by the Fellows are given in Annexure II.

Sharing Experiences and Disseminating Learnings

The Fellows were asked to develop the communication and documentation collateral guidelines and take the responsibility for honing, compiling and be responsible for one of the collateral of all the Fellows. Anjali Yadav prepared the guidelines for the photo slides. Kiran Khokhar drafted the guidelines for developing the case studies. Shaivya Rohella developed draft guidelines for the short films. Overall, blog posts, case studies, photo slides and info-graphic brief narrative and the report of each fellow on water smart solutions were progressively developed over the course of the Fellowship.

Experiential Learning

During the Fellowship, the empanelled Fellows have gone through an experiential learning curve in terms of knowledge and experience on water issues & concerns, gained from mentorship support for strategising and executing their ideas. The Fellows also explored their strengths and leadership potential over the course of the programme.

5.0 MONITORING ARRANGEMENTS

C4Y team and IWP team had developed a detailed monitoring system to oversee the implementation of Fellowship programme as stated below:

- The orientation workshop was conducted for the Fellows for providing them overview and context of the water sector in the country, especially of Delhi and NCR;
- Mentorship with partner organisations and Fellows for the Fellowship and project briefing for analysis of the project's progress;
- Regular and frequent meetings were organised with mentors from the partner organisations and academic heads of the represented educational institutions from time to time to share the project ideas of the Fellows to work on;
- Two progress mapping workshops were held with Fellows and non-profit partners to reflect on the knowledge of the Fellows on water sector and sharing experiences.
- Regular monitoring of the Fellow's work and guidance

Refer Annexure III for the snapshot of the fellowship 2019 process.

6.0 RESOURCES

The inaugural edition of the Fellowship started with five Fellows only due to limited financial resources. C4Y optimised the resources by requesting partners to host the progress mapping workshop in their premises. Furthermore, C4Y contributed substantially in terms of its human and administrative resources into the project for successful implementation and enrichment of the learning journey of the Fellows and partners.

ANNEXURE I: COHORT 1.0 of 2019 Fellows



Anjali Yadav

◀ MSc Environmental Studies, Department of Environmental Studies, University of Delhi

Placed with ICLEI South Asia

Project: Implementation of Integrated Urban Water Management (IUWM) process to support the rejuvenation of Bhalswa lake

▶ M.Sc. Environment Science & Management, Amity University, Haryana

Placed with Tree Craze Foundation

Project: Water and Environment Quest for School and University Students



Deepa Sharma

▶ MSc Natural Resource Management, University School of Environmental Management, Guru Gobind Singh Indraprastha University

Placed with Indian National Trust for Art and Cultural Heritage (INTACH)

Project: Revival of Hauz-i-Shamsi lake



Kiran Khokhar



Nidhi Dahiya

▶ B.Tech, Environmental Engineering, Delhi Technological University

Placed with Development Alternatives

Project: Transparent Jerry Can - An unconventional Water Smart Solution



Shaivya Rohella

▶ MA, Environmental Studies, Department of Environmental Studies, University of Delhi

Placed with Development Alternatives

Project: Jal-Tara Slow Sand Filter

ANNEXURE II: Water Smart Solutions for Delhi and NCR

Anjali Yadav
Placed with ICLEI South Asia
Project: Implementation of Integrated Urban Water Management (IUWM) process to support the rejuvenation of Bhalswa lake

ICLEI
Local Governments for Sustainability

GLOBAL WATER PARTNERSHIP
GWP
India Water Partnership

Reviving the Bhalswa Lake

The condition of the Bhalswa lake is deteriorating at a rapid pace due to the dumping of effluent/sewage originating from nearby dairies and residential areas, among other reasons. This project, aims at restoring the Bhalswa Lake to an ecosystem that can sustain life. It is based on the principles of Integrated Urban Water Management (IUWM). Once holistically implemented, these principles will help to revive the condition of the lake.

PROBLEMS

- Highly contaminated water
- Waste from the nearby dairies and residential areas present in the water
- Lack of oxygen in water
- High Biochemical Oxygen Demand (BOD)
- Increased algal growth in the lake water
- Slightly high pH level (acidity)
- Absence of biodiversity and water fauna

ICLEI - South Asia

BENEFITS OF RESTORING THE LAKE

- Availability of clean drinking water
- Recharge of groundwater
- Provision of refuge for wildlife
- Development in the ecotourism industry
- Aesthetically pleasing for people

SOLUTIONS

The implementation of Integrated Urban Water Management (IUWM) principles and Sustainable Water Management in the City of the Future (SWITCH) toolkit will enable us to:

- Analyse the urban water cycle
- Understand the impacts of possible interventions
- Collect primary baseline information
- Assess water demand
- Identify core areas and integration targets
- Support action planning
- Strategically prioritize actions
- Ensure better management of the water quality of the lake
- Boost the capability of Indian local governments to undertake reforms in the water sector

Deepa Sharma
Placed with Tree Craze Foundation
Project: Water and Environment Quest for School and University Students

Tree Craze Foundation

GLOBAL WATER PARTNERSHIP
GWP
India Water Partnership

Water and Environment Quest

India's growing population has put severe stress on the water resources of the country. Many cities have come dangerously close to 'Day Zero' as water is being mismanaged and groundwater exploited. With this issue in mind, 'Water and Environment Quest for School and University Students' is one such effort intended to increase participation amongst school and university students for the Jal Shakti Abhiyan. It is an online quiz that can be used to raise awareness and improve water practices as well.

PROBLEMS

- Mismanagement of water resources in India
- Storage of less than one-tenth of annual rainfall
- Disproportionate usage of water for agriculture
- Exploitation of groundwater
- Demand-supply imbalance

1

SOLUTION

'Water and Environment Quest for School and University Students' is an online quiz meant to increase participation amongst school and university students in Jal Shakti Abhiyan. The quiz will be launched across India to raise awareness for such issues and improve water practices on a larger scale.

2

BENEFITS

- Enhance participation for Jal Shakti Abhiyan
- Function as a competitive knowledge-building platform
- Raise awareness about water issues
- Help assess knowledge gaps and attitude orientation about water
- Enhance knowledge about water-smart practices
- Build skills to address complex water issues

3

Proposed Plan for the Revival of Hauz-i-Shamsi lake

Lakes and wetlands are rapidly disappearing due to the rise of urbanization. Delhi has lost more than a hundred water bodies in the last few decades and the loss of such water resources will inevitably lead to water insecurity in the future. One such lake is the Hauz-i-Shamsi lake which was once a leading example of the ancient water management systems in Delhi.



PROBLEMS

- Discharge of waste and sewage
- Lack of regular cleaning
- Insufficient water quantity in the lake
- Lack of periodic desilting and dredging
- Insufficient number of channels and drains that are connected to the reservoir

SOLUTIONS

The proposed solutions are a replicate of Hauz Khas lake which was done by INTACH using tertiary treated water from Vasant Kunj STP.

- Bioremediation
- Drawdown
- Aeration
- Dredging
- Disposal of leaves and dry sweeping
- Introduction of fish and free-floating vegetation
- Pruning of trees
- Creation of littoral zone



Water Issues in Savda Ghevra

Savda Ghevra is a resettlement suburb that is home to more than 20,000 families. It was developed by the Delhi Urban Shelter Improvement Board about 40 km west of New Delhi to offer residence to slum dwellers from inner-city areas. The people in Savda Ghevra recognise that their poorly constructed septic tanks are seeping into walls, rendering their water sources such as groundwater unsafe and unhealthy for consumption.



PROBLEMS

- Savda lacks proper sanitation and infrastructure. Its community toilets, fitted with septic tanks, are mostly unusable and frequently overflow, forcing people to defecate openly and without dignity.
- The water is highly contaminated with coliform, E. coli and other harmful contaminants. Consequently, the residents are forced to capture groundwater which is already unsafe for consumption.
- The unavailability of potable water exposes the residents to a high risk of water-borne diseases such as diarrhoea, cholera, typhoid fever, hepatitis A, amoebic and bacillary dysentery and other diseases. Moreover, the water is stored in open containers or tumblers which may serve as a breeding ground for mosquitoes, thereby, giving rise to other deadly diseases like dengue, malaria etc.



SOLUTION

Transparent Jerry Can (TJC) is a product of Development Alternatives that was identified as an efficient possible solution to these problems as it would provide access to safe drinking water to the residents of Savda Ghevra. It is a cost-effective product which works on the principle of solar water disinfection.

ADVANTAGES OF USING TJC

- It improves the microbiological quality of the water.
- It is easy to install and affordable as it only requires sunlight.
- It reduces the need for traditional energy sources such as firewood and kerosene/gas.
- It saves water as compared to other water purifiers like RO.
- It reduces major environmental problems like deforestation and air pollution in the longer run.

DISADVANTAGES OF USING TJC

- It requires solar radiation to function and is not suitable to use on cloudy or rainy days.
- It requires clear water and does not change the chemical quality of the water.
- It is not suitable for purifying large volumes of water.

Jal TARA Filter: The low-cost innovative approach

Due to concerning problems like water inaccessibility and deteriorating water quality in Delhi, new technologies need to be implemented. Therefore, Development Alternatives organisation, created the Jal TARA bio-sand filter, keeping in mind the low-income families who are unable to afford costly products. The Jal TARA filter is an innovative, affordable and effective solution that will help to combat the aforementioned problems.

PROBLEMS

Water Concerns

- Only 51% of the households in slums receive piped water supply.
- People residing in unauthorised colonies, slums and resettlement colonies have to devote at least two hours daily to fetch water for use.
- Pipe leakage, unmetered connections and water thefts have resulted in a 40% loss of water.
- Continuous exploitation has led to a decrease in the level of groundwater.



Water Quality

- 40% of water is sourced from the Yamuna river. However, the river has been a victim of pollution and waste disposal.
- The city has 41 Sewage Treatment Plants (STPs) of which only 33 are operational. 16 of the STPs do not meet the discharge standards based on Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD) etc.
- The groundwater is contaminated with lethal toxins like arsenic, fluoride, nitrate, etc.



Issues with water ATM in Model Town

- It is placed at an unfavourable distance away from most of the residents' homes.
- 35% of residents are unwilling to pay for its services.
- Residents face trouble in recharging their RFID cards.
- Residents have to deal with long waiting hours to get water.
- The water quality of the ATM is invalidated.



SOLUTION

Water Accessibility

The Jal TARA community Bio-sand Filter, developed by the product development domain of Development Alternatives group, was identified as the perfect approach to address both issues of water accessibility and water quality.



Advantages of using Jal Tara filter

- It ensures bacteriological, chemical and physical improvement in the water quality.
- It is capable of removing faecal coliform and Streptococci with 99-99.9% efficiency.
- It is capable of reducing the turbidity of the water.
- It is a durable product that can last up to 15 years.
- It is easy to install at any site in rural, urban, semi-urban and remote areas.
- It can function within an Urban Water Enterprise model.
- It is close to household premises.

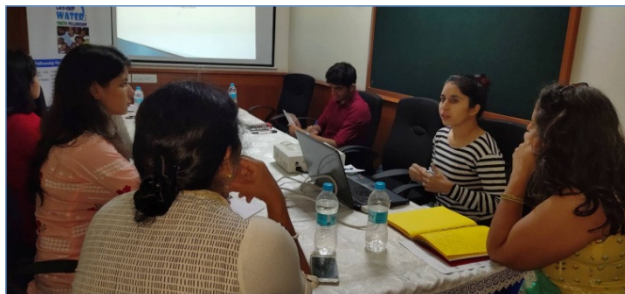
ANNEXURE III: Snapshot of the Fellowship 2019 Process



Launch Ceremony: Friday, April 05, 2019 in collaboration with Guru Gobind Singh IP University (GGSIPU), School of Environment Management, New Delhi



Orientation Workshop: Monday, June 03, 2019 at Vishwa Yuvak Kendra, New Delhi



First Progress Mapping Workshop: Monday, 29, 2019 at Indian Social Institute, Lodhi Road, New Delhi



Second Progress Mapping Workshop: Friday, August 23, 2019 with support from Indian National Trust for Art and Cultural Heritage (INTACH)



Felicitations Ceremony: Wednesday, December 18, 2019 at India International Centre, New Delhi



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