Gender Analysis of GIZ project "Integrated Resource Management in Asian cities: the urban Nexus" – India

By Sören Borghardt

April 2018

Table of Contents

List of Abbreviations

ADB	Asian Development Bank
BMZ	Federal Ministry for Economic Cooperation and Development
BPfA	Beijing Platform for Action
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HAP	Household Air Pollution
IPV	Intimate Partner Violence
LFG	Landfill gas
LPG	Liquefied Propane Gas
MDG	Millennium Development Goal
MSW	Municipal Solid Waste
MYT	Maximum Yield Technology
NMEW	National Mission for Empowerment of Women
NRCW	National Resource Center for Women
PCMA	Prohibition of Child Marriage Act
PWDVA	Protection of Women from Domestic Violence Act
RDF	Refuse Derived Fuel
SCP	Smart City Proposal
SDG	Sustainable Development Goal
SRB	Sex ratio at birth
SRCW	State Resource Centers for Women
UN ECOSOC	United Nations Economic and Social Council
UNFPA	United Nations Population Fund
WEF	World Economic Forum
WHO	World Health Organization

1. Executive summary

The consultant Mr. Sören Borghardt conducted the gender analysis on India, partner country of the project "Integrated Resource Management in Asian Cities: The Urban Nexus". The urban nexus project promotes integrated resource management to identify potential synergies between the sectors water, energy and food security in cities. It is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and takes place in twelve cities in seven different countries across Asia. The two Indian partner cities are Nagpur and Rajkot.

The project has been classified with the gender policy marker G-0. This implies, that gender equality is neither a principal nor a significant objective of this development measure. However, it does not remove the responsibility for discussing with partners how positive impacts on gender equality might nevertheless be realized at reasonable cost or specific steps taken to avoid negative results.

The gender analysis aims to provide background information on the state of gender equality in the partner country with a focus on the three Nexus sectors water, energy and food. Further, it aims at evaluating gender equality within the project and to recommend specific actions to be undertaken by the project to be gender-responsive. To realize this objective, a desk-based review of literature on gender relations and the manifestation of gender in political, social and economic spheres was performed. Moreover, studies and other documents elaborated by the GIZ Urban Nexus Project were analyzed regarding gender specific activities, interventions or impact.

The design of urban infrastructure takes places in a context of high gender-sensitivity. As women perform most household-related tasks in India, they are more effected than men by insufficient solid waste management and restricted access to freshwater. Thereby, women can also benefit the most by better technology that leads to less pollution, less environmental degradation and easier access to water. The study recommends to perform Gender Mainstreaming at all project levels in order to address the practical needs and strategic interests of women and best harness this opportunity of improving their living conditions. Further, it recommends to ensure a gender balanced participation at all events.

2. Gender Analysis India

2.1 Introduction

India is the second-largest country in the world and the largest democracy. It is located on the Indian subcontinent, bordering Pakistan in the Northwest, China, Nepal and Bhutan in the North and Bangladesh and Myanmar in the Northeast. India is a lower-middle income economy and has seen fast economic growth since it adopted open-market policies in 1991. The Gross Domestic Product (GDP) of India increased 8.5x over the past 25 years.[9] The GDP per capita in Pur-

Population:	1.354.051.000 (2nd)[1]
GDP/capita, nominal:	$ 1.850 (141th/ 187 countries)[2]
GDP/capita (PPP):	$ 7.153 (122th/ 187 countries)[3]
Human Development Index:	0.624 (131st/ 188 countries)[4]
Global Gender Gap Score:	0.669 (108th/ 144 countries)[5]
Government:	Federal parliamentary republic[6]
Ethnic groups:	72% Indo-Aryan, 25% Dravidian, 3% others[7]
Religion:	79.8% Hinduism, 14.2% Islam, 6% others[8]

chasing Power Parity and constant 2011 international dollar (to account for population growth, price differences and inflation) has increased from 1.737$ in 1991 to 6.092$ in 2016.[10] The percentage of the population in extreme poverty decreased from 45.9% in 1993 to 21.2% in 2011.[11] In terms of gender equality, India is ranked 108th/144 countries in the World Economic Forum's (WEF) Global Gender Gap Report 2017, in between Liberia and Sri Lanka.

The debate on gender in the context of development started to receive a broader attention at the end of the 1960s. The Declaration on the Elimination of Discrimination Against Women was adopted by the United Nations General Assembly in 1967 and served as an important precursor to the legally binding 1979 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), a hallmark of gender equality. This development took place in parallel to the

---

[1] UNDESA 2017 (Estimate for 2018)
[2] IMF 2017 (Figures for 2017)
[3] Ibid.
[4] UNDP 2017
[5] WEF 2017
[6] CIA 2018
[7] Ibid.
[8] Ibid.
[9] World Bank 2016a
[10] World Bank 2016b
[11] World Bank 2011

"Second-wave feminism" in Western societies, which broadened the debate on gender equality by focusing on a wide range of issues, such as domestic violence, reproductive rights and the workplace. In comparison, the "First-wave feminism" of the 19th and 20th century had mainly focused on gaining the right to vote. The debate on the role of women in the context of development was brought to greater attention by the seminal work of Ester Boserup. Her book "Women's Role in Economic Development", published in 1970, changed the perception of women as solely mothers and caregivers towards acknowledging their contributions to national economies in both paid and unpaid work. Her work is perceived as one of the main inspirations for the UN Decade for Women between 1975 and 1985, which started after the First World Conference on Women in Mexico City in 1975 and included two follow-up conferences in Copenhagen in 1980 and in Nairobi in 1985. The UN Decade for Women focused on women and development. It increased the awareness of inequalities that women are facing among national leaders and the general public.[12] It was followed by the Fourth World Conference on Women in Beijing in 1995. Main outcome of the conference was the Beijing Declaration and Beijing Platform for Action (BPfA), a landmark global agenda for gender equality, women's human rights and women's empowerment. Even 20 year later, it was referred to as "the most progressive blueprint ever for advancing women's rights" by UN Women.[13] It focuses on 12 critical areas of concern and states actions to be taken by governments, to a lesser extent also by international organizations, NGOs, academia and the private sector.

Following the Millennium Summit in September 2000 and its adoption of the Millennium Declaration, the General Assembly of the United Nations agreed unanimously to commit to the Millennium Development Goals (MDGs). Those are eight development goals for the years 2000 – 2015. While all goals have at least an indirect impact on gender equality, MDG 3 focuses exclusively on the promotion of gender equality and female empowerment. The MDGs were followed by the 2030 Agenda for Sustainable Development, including the Sustainable Development Goals (SDGs). The SDGs are a set of 17 development goals, which are composed of 169 targets and 230 individual indicators. The SDGs build upon the MDGs and are guiding international public policy for the years 2016 – 2030. They were adopted by the UN General Assembly in September 2015 in New York. They encompass a truly global outlook as they are to be implemented by all countries and deal with a diverse set of issues, such as quality education, affordable and clean energy or climate action. SDG number five deals exclusively with Gender Equality. However, the

---

[12] Britannica 2018
[13] UN Women 2015

promotion of gender equality can also be found in other SDGs. For example SDG number six "Clean water and sanitation" addresses gender equality in its target 6.2, which says "By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations".[14]

2.2 Institutions/Laws

India has ratified the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1993. The National Mission for Empowerment of Women (NMEW) was launched in 2010. Its aim is to facilitate the co-ordination between all Ministries and Departments which are responsible for or connected to the welfare and socio-economic development of women.[15] As part of NMEW, a National Resource Center for Women (NRCW) as well as 30 State Resource Centers for Women (SRCW) have been established. They are comprised of Gender experts from various thematic domains and are focal points for information regarding gender related issues in India. The NRCW and SRCWs are in charge of carrying out impact assessment studies of government policies in their relation to women. Further, the NRCW is responsible for the development of media strategies about government programs and awareness campaigns.[16]

Legally, Hindu, Sikh, Buddhist and Jain women enjoy equal inheritance rights to men. However, many women, particularly in northern India, are deprived of their inheritance or give it to male family members to avoid conflict. Further, Muslims often follow Sharia law, which discriminates against women.[17]

2.3 Society and religion

The majority of Indians are Hindu (79.8%). Large minorities are Muslims (14.2%), followed by Christians (2.3%) and Sikh (1.7%).[18] For centuries, Indian society was structured by a caste system, traditionally consisting of five different castes. Each caste was associated with specific jobs, roles, obligations and inter-caste marriage was forbidden. In 1920, the British Raj reversed its policy of banning lower castes from government jobs and reserved a certain percentage of jobs for them. After India gained independence, those affirmative actions were formalized. In 1950, quotas for government jobs and educational institutions were set up, alongside a banning of discrimination based on caste.[19] However, the caste system is still influencing society, with members

---

[14] UNDESA 2018
[15] OECD 2014
[16] MWCD 2013
[17] OECD 2014
[18] CIA 2018
[19] BBC 2017

of lower-ranked castes suffering from discrimination and violence.[20] The caste system institution-alizes power inequalities, as members of low ranked castes can find it hard to receive protection against all kinds of abuse. Especially Dalit women, from the lowest ranked caste, are very vulner-able to sexual assault and rape by men of higher ranked castes.[21] Between 2012 and 2014, the nationwide recorded violence against Dalit rose 29%.[22]

2.4 Violence

In 2005, the landmark Protection of Women from Domestic Violence Act (PWDVA) was passed, for the first time offering a definition of "domestic violence" in Indian law. It includes both actual abuse and threatened abuse, whether physical, sexual, economic, emotional or verbal.[23] Figures of violence against women were rising sharply in the last years, more than doubling between 2005 and 2016, with 155.553 and 338.954 reported numbers of crimes, respectively.[24][25] However, the rising figures might also reflect greater awareness among women about legal support, especially following the passing of the PWDVA. Intimate partner violence (IPV) is slowly decreasing, as the number of ever-married women (married, divorced and widowed) who have ever experienced spousal violence went down from 37.2% in 2005/2006 to 28.8% in 2015/2016.[26] The public per-ception of violence against women strains its eradication, as 22.2% of women and 27.8% of men find it justifiable for a man to beat his wife sometimes and/or disagree with the statement that it is 'never justifiable'.[27]

The sex ratio at birth (SRB) represents the number of male births per 100 female births. It naturally fluctuates between 104-106 male births per 100 female births. In India, estimates by the United Nations Population Fund (UNFPA) indicate a very imbalanced SRB of 110 boys per 100 girls.[28] This is one of the strongest son biases in the world, in this category India is being ranked 141th out of 144 countries in the World Economic Forum's (WEF) Global Gender Gap Report 2017.[29] The number of females per 1000 males was 943 at all India level in 2011. There are considerable

---

[20] The Guardian 2016
[21] CNN 2016
[22] Couderé 2016
[23] MLJ 2005
[24] NCRB 2005
[25] NCRB 2016a
[26] IIPS 2015-2016
[27] CERRSE 2012
[28] UNFPA 2016
[29] WEF 2017

differences between Indian states, the sex ratio was highest in Kerala (1084) and lowest in Daman & Diu, a small union territory in western India (618).[30]

2.5 Economic participation

India is ranked 139th out of 144 countries in the World Economic Forum's Global Gender Report in terms of economic participation and opportunity. On average, the number of female youth that is not in employment or education is six times as high as male youth. There are twice as many unemployed women as men and women account for only 23% percent of high-skilled jobs. Further, women contributed three times as much to family work and do more than five times more unpaid work each day than men. Moreover, only 10% of firms have female top managers and the board of publicly traded companies consist of about eight times as many men as women.[31] The overall Workforce Participation Rate is 25.51% for females and 53.26% for males. There is a large rural-urban divide for females (rural: 30%, urban: 15.4%), but not for males (rural: 53%, urban: 53.76%).[32] The average salary for women is considerably lower than for men, irrespective of education. The wage gap is larger in rural areas than in urban areas.[33] Positive signs can be found in the access to finance as the number of women having and using a bank or savings account went up from 15.1% in 2005/2006 to 53% in 2015/2016.[34]

2.6 Marriage

India has a pluralistic legal system, accommodating a combination of civil law, religious law and customary law. In the case of marriage law, all forms of law are discriminating women. Under civil law, the minimum age for women is 18 years, while it is 21 years for men. Under religious and customary law, the minimum age for marriage for women can be much lower. In fact, in 47% of all marriages, the bride is a child.[35] Of all girls between 15 years and 19 years old, 21.4% are currently married or have been married in the past, according to UN data from 2011.[36]

To bring an end to the practice of child marriage, the Prohibition of Child Marriage Act (PCMA) was adopted in 2006, rendering marriages before 18 years of age for women and before 21 years of age for men as illegal, voidable and punishable for the older partner. However, the implementation is suffering from a multitude of challenges: *Firstly*, the PCMA states child marriages as voidable, not as void. Therefore, child brides in lack of resources for legal support, will find it hard

---

[30] MOSPI 2016a
[31] WEF 2017
[32] MOSPI 2016b
[33] MOSPI 2016b
[34] IIPS 2015-2016
[35] WHO 2013
[36] UN 2015

to void their marriage. *Secondly*, the PCMA conflicts with religious law stating younger minimum ages, thereby creating legal ambiguity. *Thirdly*, Child Marriage Protection Officers, who are tasked under the PCMA to prevent child marriage, have only been appointed in about half of the states in India.[37] Concerning divorce, Hindu marriages can be repudiated by both partners equally after wrongdoing, but religious law allows only Muslim men to initiate a divorce. In the case of Christians, men can initiate a divorce on any grounds, while women can do so only in case of adultery.[38] The practice of *dowry* is still wide-spread, even though it is illegal since 1961, when the Dowry Prohibition Act was passed. The dowry is to be paid by the bride's family to the groom's family and usually constitutes a major source of income for the latter, while creating an extreme financial burden on the first. Oftentimes, the groom's family harasses or tortures the bride in an effort to extort a higher dowry of her family. Many desperate brides end up committing suicide. Further, many cases of murder are reported, e.g. bride burning, in which the groom's family kills the bride because her family cannot meet the financial demands of the grooms family. After the murder, the groom then marries again.[39] In 2016, 7.621 cases of Dowry Death were reported.[40]

The financial obligations that are associating with raising a daughter are one of the main reasons for widespread feticide and abortion of the girl child (see section 2.4).

2.7 Sanitation/Water

In India, 39.8% of the population defecated in the open in 2015. While the figure went down from 66% in 2000, it means that still more than 522 million people are deprived of their human right to sanitation. The situation is especially dramatic in rural areas, where still 55.6% rely on open defecation, as opposed to only 7.4% in urban areas.[41] The remaining level of open defecation is mainly a problem of the rural poor, where there has been little to no change over the past twenty years.[42] Lacking or insufficient sanitation facilities increase the vulnerability of sexual assault for women, as they have to leave their home and hide in the nature to get relieve. Many cases of rape in connection with open defecation have been reported.[43]

Access to sanitation ranks in the top-three health and security concerns for women in India.[44] Open defecation is a major health risk for children, as it leads to microbial contamination of water, which in turn causes diarrhea in children. Open defecation is the main reason India reports the

---

[37] CRR 2013
[38] OECD 2014
[39] Seeger 2013
[40] NCRB 2016b
[41] WHO & UNICEF 2018
[42] WHO & UNICEF 2015
[43] BBC 2013
[44] The Guardian 2014

highest number of diarrheal deaths among children under-five in the world. Further, frequent di-arrhea increases the risk of stunting, infections and malnutrition. About 38% of all children in India younger than five years of age suffer from chronic malnutrition. Half of those cases are believed to be because of insufficient sanitation, water and hygiene practices, which lead to life-threatening diseases like diarrhoea.[45] In 2014, Prime Minister Narendra Modi started Swachh Bharat Mission, an ambitious program, which aims at eliminating open defecation in India until the year 2019. To achieve this goal, $25 billion have been mobilized by Government, private sector and civil society.[46]

2.8 Energy

The percentage of households with access to clean energy for cooking like electricity or LPG, as opposed to biomass, increased from 25.5% in 2005/2006 to 43.8% in 2015/2016.[47] This not only improves health and air quality through reduced emissions, but also enables women to spend their time more productively, as on average women spend 374 hours per year collecting fire-wood.[48] Access to clean energy is especially relevant in the context of cooking, as daily exposure to toxic smoke from traditional cooking practices is a major cause of death in developing countries. According to estimates of the World Health Organization (WHO), exposure to smoke from cooking causes globally more than 4 million premature deaths each year, exceeding the numbers of deaths related to tuberculosis and malaria.[49] Household air pollution (HAP) is of high relevance in the context of gender, as globally more than 60% of all premature deaths from HAP in 2012 were among women and children.[50]

While energy-policy is usually planned 'gender-blind', this forgoes significant opportunities to en-hance the situation of women. Special emphasis should be laid on the specific demands and challenges women and minorities are facing, for example in post-harvesting or home-based mi-cro-enterprises. Further, systems of decentralized renewable energy, e.g. renting energy-related devices like batteries from home, could create rural employment, thereby enhancing the situation of women. For successful models of cooperatives and micro-enterprises to spread across India,

---

[45] UNICEF 2018
[46] WHO & UNICEF 2017
[47] IIPS 2015-2016
[48] VNR 2017
[49] GACC 2018
[50] WHO 2016

they need to be included via Gender Mainstreaming in the planning process.[51] Gender Mainstreaming is defined by the UN Economic and Social Council (ECOSOC resolution 1997/2) as

> "... the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality."[52]

Good results have been achieved in including Gender Mainstreaming in a project financed by the Asian Development Bank (ADB) in Madhya Pradesh.[53] The project provided capacity development for women micro-entrepreneurs in the safe and efficient use of energy for household and business activities as well as business-development services. The project led to increased incomes and savings among women. Further, the efficiency increases it initiated, combined with an increased willingness of husbands to share household work with their entrepreneurial wives, led to a reduction of time poverty among women. Overall led the project to increased autonomy among the participating women micro-entrepreneurs, which was also expressed in an increasing say in household decision-making.[54]

2.9 Agriculture

Agriculture accounts for 16.8 % of India's GDP and employs 42% of the labor force.[55] Agriculture is a highly gender sensitive sector, employing 56% of the female workforce,[56] but only 38% of the male workforce.[57] It has low skill requirements and can be easily combined with work at home or childcare. 52-75% of all women in agriculture are illiterate, making a transformation to a better-paid job nearly impossible and increasing their dependence on agriculture as a source of income. The distribution of critical resources, like property ownership rights, is unevenly distributed across gender.[58]

---

[51] Govindan & Palit 2017
[52] UN ECOSOC 1997
[53] Killeen 2017
[54] ADB 2018
[55] World Bank 2017a
[56] World Bank 2017b
[57] World Bank 2017c
[58] Singh & Sengupta 2009

3. Gender Analysis Urban Nexus project

3.1 Nagpur: Municipal Solid Waste Management

The city of Nagpur has 2.5 million inhabitants and generates 900-1000 tons of waste daily, out of which only 150-200 tons of waste is being processed. The waste management system of the city is evidently inadequate, especially as the city is set to grow to 4.3 million inhabitants until 2041. Currently, only 5 lakhs (500.000) of household are being served by waste collection against the population of 2.5 million. The unprocessed waste, about 800 tons daily, are being dumped at the Bhandewi Site. Over the last few years, almost 200.000 MT of waste were dumped there. This leads to serious implications for the environment and health of surrounding neighborhoods, as the odor attracts flies and leachate is seeping into the ground.[59]

To support the city in creating a sustainable waste management system, urban nexus project conducted a detailed solid waste management study for the city. The urban nexus project recommends the adoption of Maximum Yield Technology (MYT) as the appropriate technology for Nagpur. While the very high organic load and moisture content of Municipal Solid Waste (MSW) in Nagpur render the use of incineration plants unsuitable, those are ideal conditions for MYT. Further, MYT allows for optimum economic exploitation of Municipal Solid Waste (MSW) in form of raw materials, refuse derived fuel (RDF) and landfill gas (LFG). It is an emission-free, clean and odor-free technology and therefore has very high social acceptability.[60]

This is in line with the plan of Nagpur to become a smart city. The Indian Government has launched the Smart Cities Mission in 2015, an urban renewal and retrofitting program that aims at making Indian cities more citizen friendly and sustainable.[61] In five competitive rounds, it has selected 99 cities to become smart cities and receive special funding for this from 2017-2022. The concept of smart cities is very broad and includes "smart solutions" in sectors such as e-governance, waste management, water management, energy management, urban mobility and others. Both project cities, Nagpur and Rajkot, have been selected to become smart cities. In the selection process, the cities had to present their respective Smart City Proposal (SCP), outlining their plans how to transform the city and which aspects to focus on. The SCPs were created in a

---

[59] GIZ 2017a
[60] GIZ 2017c
[61] MoUD 2015

consultative manner, with participation of the citizens. This consultative process lead Nagpur to focus on smart solutions that especially recognize the (security) needs of women: The expansion of LED-street lighting in combination with the installation of surveillance cameras had a positive impact on the security of women, especially at night. The project supports the SDGs 3.9, 7.2, 7.A, 7.B, 11.6, 12.5, 13.A and 17.7.

Gender issues and recommendations

- Include Gender Mainstreaming in proposed integrated solid waste management study to incorporate practical needs and strategic interests of women
- Women are working like men as scavengers. They are suffering from inhumane working conditions and are risking their health in their daily exposure to (toxic) waste. Therefore, technologies should be promoted that do not rely on waste pickers but other technologies (MYT). Former waste pickers can find employment at the conveyer belt, sorting out metals, cans, bottles etc.
- Consider the needs of women in the selection of appropriate collection, transportation, processing, treatment, and disposal practices
- If waste to energy is being pursued, consider the possible implications of better access to energy within the concept of empowering women through electrification

3.2 Rajkot: Water Demand Management

Rajkot is the fourth largest city in the state of Gujarat and has a population of 1.28 million people. It features a vibrant economy, which lead to a population growth of 28.24% over the last decade. The city is located in an arid zone with erratic rainfalls, making water supply one of the most pressing issues for the city. Currently, the city is able to provide only 106 liters of water per capita per day, with intermittent supply for an average of 20 mins per day. Most of the water comes from the Narmada Canal, which is hundreds of kilometers away. Thereby, every liter of water requires about 6 Watt of energy to make it to Rajkot, a highly unsustainable practice. The inequitable and intermittent water supply has led to unrest in the city in the past. Also, 40% of the city is disconnected to centralized sewage infrastructure, with untreated sewage being discharged into the Aji River, which is posing a threat to public health and the environment.[62]

---

[62] GIZ 2017b

To improve the efficiency of existing infrastructure, reduce the required energy and save available resources, urban nexus project conducted a detailed water demand management study for the city. A water balance tool for the city was developed, involving the establishment of district metering areas, which helped the city to take control of its water losses. Further, the study provided recommendations regarding the utilization of the existing SCADA system for processing performing indicators, usage of GIS for maintaining data and the re-use of treated wastewater for agricultural purposes to reduce water demand in the future. The project supports the SDGs 3.9, 6.1, 6.3, 6.4, 6.5, 6.A, 6.B and 17.7.

Gender issues and recommendations

- Include Gender Mainstreaming in water demand management study to incorporate practical needs and strategic interests of women
- Water supply is highly gender-sensitive, as it is essential for all household tasks, that are usually performed by women in India, such as cleaning, cooking, washing of clothes or care for children and elderly
- Improve the sewage system as the threat to public health by wastewater discharged in the ecosystem is mostly affecting marginalized groups (such as Dalits)
- Improved sewage system benefits especially 8% of the population, who do not yet have in-house sanitation.[63] Toilets are recognized as a main step towards gender equality as they bring a multitude of direct benefits for women and children in form of increased security from sexual violence, parasitic infections and better health, due to 24/7 availability
- 24/7 water supply brings key advantaged to public health, as systems of intermittent water supply are prone to bacterial contamination. This improvement in public health can lead to higher rates of school attendance among children[64]
- 24/7 water supply revolutionizes service to the poor, as they save time in queuing and carrying. This task is often performed by women, who can then spend the saved time on education or economic activity[65]
- 24/7 water supply reduces the burden on water resources as stored water no longer has to be discarded when new supply comes in, instead the access in on-demand[66]

---

[63] GIZ 2016
[64] World Bank 2010
[65] Ibid.
[66] Ibid.

- 24/7 water supply enables the city to improve efficiency of service provision and create employment opportunities for men and women in the fields of meter reading and customer care[67]

3.3 General Recommendations

Conduct Gender Mainstreaming and gender impact assessments at all project levels to

- Enhance understanding on gendered impacts of water/energy scarcity lacking sanitation
- Increase awareness of potential male dominance in the project's participants (due to male dominance in the Indian administration)
- Ensure that affected people are not treated as an aggregated, uniform group. Instead understand and address the different roles and needs that are related to gender, age, caste, class etc. (gender sensitivity as eye-opener for other social dimensions)
- Avoid (unintendedly) increasing gender inequality or poverty among women
- Utilize mutual benefits as women can be benefiters and drivers of change to modern urban infrastructure and better livelihoods
- Increase awareness of other relevant social dimensions, like the impact on minorities and scheduled castes and tribes

Promote women's participation

- In workshops, technical trainings, visiting tours, the Nexus task force and city councils
- Through special support for the Mayor of Nagpur, Ms. Nanda Jichkar
- Through working with female staff, like project director Ms. Erlbeck and country coordinator Ms. Ritu Thakur. Overall, the Urban Nexus project staff is gender-balanced

Promote participation of
- The appointed gender focal person, if existing in the partner's government structure
- Gender experts to give advice on project activities and (feasibility) studies to ensure gender inclusion

---

[67] Ibid.

4. References

Asian Development Bank (ADB) 2018: India Gender Equality Results Case Study: Enhancing Energy-Based Livelihoods for Women Micro-Entrepreneurs, https://www.adb.org/sites/default/files/publication/401901/india-gender-results-case-study.pdf (accessed on 06.03.18)

British Broadcasting Corporation (BBC) 2017: What is India's caste system?, http://www.bbc.com/news/world-asia-india-35650616 (accessed on 22.02.18)

Cable News Network (CNN) 2016: Sexually abused and seen as the lowest of the low: life as an 'untouchable' Dalit woman, https://edition.cnn.com/2016/07/25/asia/india-dalit-caste-women/index.html (accessed on 05.03.18)

Center for Reproductive Rights (CRR) 2013: Supplementary Information on India, http://tbinternet.ohchr.org/Treaties/CEDAW/Shared%20Documents/Ind/INT_CEDAW_NGO_Ind_15400_E.pdf (accessed on 06.02.18)

Center for Social Sciences & Education (CERRSE) 2012: World Values Survey (2010-2014) – India, http://www.worldvaluessurvey.org/WVSDocumentationWV6.jsp

Central Intelligence Agency (CIA) 2018: World Factbook, https://www.cia.gov/library/publications/the-world-factbook/geos/in.html (accessed on 09.02.18)

Couderé, Hanne 2016: India: Violence Against Dalits on the Rise, https://thediplomat.com/2016/05/india-violence-against-dalits-on-the-rise/ (accessed on 05.03.18)

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

- 2016: Water Demand Management in Rajkot – Gujarat, India Mission Report, http://www.unescap.org/urban-nexus/rajkot-india (accessed on 13.03.18)
- 2017a: Case Study: Municipal Solid Waste Management, Nagpur, India, http://www.unescap.org/urban-nexus/nagpur-india (accessed on 13.03.18)
- 2017b: Case Study: Water Demand Management in Rajkot, India, http://www.unescap.org/urban-nexus/rajkot-india (accessed on 13.03.18)
- 2017c: Solid Waste Management for Nagpur, Feasibility study, http://www.unescap.org/sites/default/files/Report_IN_Nagpur_SolidWasteManagement_ArcadisGermanyGmbH_2017.pdf (accessed on 30.03.18)

International Institute for Population Sciences (IIPS) 2015/2016: National Family Health Survey 4, http://rchiips.org/nfhs/pdf/NFHS4/India.pdf (accessed on 06.02.18)

International Monetary Fund (IMF) 2017: World Economic Outlook Database April 2017, http://www.imf.org/external/pubs/ft/weo/2017/01/weodata/index.aspx (accessed on 21.03.18)

Govindan, Mini and Palit, Debajit, Medium 2017: A glaring omission in India's energy policy: gender justice, https://medium.com/energy-access-india/a-glaring-omission-in-indias-energy-policy-gender-justice-afc63375eb20 (accessed on 09.02.18)

Killeen, Philip, LEDS Global Partnership 2017: Gender mainstreaming in India's energy sector, http://ledsgp.org/2017/02/gender-mainstreaming-in-indias-energy-sector/?loclang=en_gb (accessed on 09.02.18)

Ministry of Statistics and Programme Implementation (MOSPI)

- 2016a: Women and Men in India, Chapter 1: Population, http://mospi.nic.in/sites/default/files/reports_and_publication/statistical_publication/social_statistics/WM16Chapter1.pdf (accessed on 09.02.18)
- 2016b: Women and Men in India, Chapter 4: Participation in Economy, http://mospi.nic.in/sites/default/files/reports_and_publication/statistical_publication/social_statistics/WM16Chapter4.pdf (accessed on 09.02.18)

Ministry of Law and Justice (MLJ) 2005: The Gazette of India, Protection of Women from Domestic Violence Act, https://web.archive.org/web/20130301005246/http://wcd.nic.in/wdvact.pdf (accessed on 07.02.18)

Ministry of Urban Development (MoUD) 2015: Mission Statement & Guidelines – Smart Cities, http://smartcities.gov.in/content/innerpage/guidelines.php (accessed on 13.03.18)

Ministry of Women and Child Development (MWCD) 2013: National Resource Center for Women, http://pib.nic.in/newsite/PrintRelease.aspx?relid=101171 (accessed on 06.02.18)

National Crime Records Bureau (NCRB)

- 2005: Crime in India, http://ncrb.gov.in/StatPublications/CII/CII2005/cii-2005/Table%205.1.pdf (accessed on 06.02.18)
- 2016a: Crime in India, http://ncrb.gov.in/StatPublications/CII/CII2016/pdfs/NEW-PDFs/Crime%20in%20India%20-%202016%20Complete%20PDF%20291117.pdf (accessed on 06.02.18)
- 2016b: Crime in India, http://ncrb.gov.in/StatPublications/CII/CII2016/pdfs/Table%203A.5.pdf (accessed on 09.02.18)

Organization for Economic Cooperation and Development (OECD) 2014: Social Institutions & Gender Index India, https://www.genderindex.org/wp-content/uploads/files/datasheets/IN.pdf (accessed on 06.02.18)

Seeger, Leigh 2013: International Policy Digest, India's Dowry Culture, https://intpolicydigest.org/2013/07/30/india-s-dowry-culture/ (accessed on 23.02.18)

Singh, Roopam and Sengupta, Ranja 2009: The EU India FTA in Agriculture and Likely Impact on Indian Women, http://in.boell.org/sites/default/files/downloads/Summary_agr.pdf (accessed on 09.02.18)

The Guardian

- 2014: Lack of toilets puts India's health and rural women's safety at risk (2014), https://www.theguardian.com/global-development/2014/aug/28/toilets-india-health-rural-women-safety (accessed on 08.02.18)
- 2016: India's caste system is alive and kicking – and maiming and killing, https://www.theguardian.com/commentisfree/2016/aug/15/india-caste-system-70-anniversary-independence-day-untouchables (accessed on 23.02.18)

United Nations (UN) 2015: Department of Economic and Social Affairs, Population Division, World Marriage Data, http://www.un.org/en/development/desa/population/theme/marriage-unions/WMD2015.shtml (accessed on 06.02.18)

United Nations Children's Fund (UNICEF) 2018: India, What we do, Stunting, http://www.unicef.in/Whatwedo/10/Stunting (accessed on 08.02.18)

United Nations Department of Economic and Social Affairs (UNDESA) 2017: World Population Prospects: The 2017 Revision, https://esa.un.org/unpd/wpp/DataQuery/ (accessed on 21.03.18)

United Nations Development Program (UNDP) 2017: Human Development Report 2016, http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf (accessed on 21.03.18)

United Nations Economic and Social Council (UN ECOSOC) 1997: ECOSOC Agreed Concluions 1197/2, http://www.un.org/womenwatch/osagi/pdf/ECOSOCAC1997.2.PDF (accessed on 13.03.18)

United Nations Population Fund (UNFPA) 2016: Sex Ratio at Birth – The Role of Gender, Class and Education, http://india.unfpa.org/sites/default/files/pub-pdf/Sex%20Ratio%20at%20Birth%20-%20role%20of%20gender%20class%20and%20edu%20FINAL%20for%20print.pdf (accessed on 30.03.18)

Voluntary National Review Report on Implementation of Sustainable Development Goals (VNR) 2017: https://sustainabledevelopment.un.org/content/documents/16693India.pdf (accessed on 07.02.18)

World Bank

- 2010: 24x7 Water Supply is Achievable, https://www.wsp.org/sites/wsp.org/files/publications/WSP_Karnataka-water-supply.pdf (accessed on 14.03.18)
- 2011: Poverty headcount ratio at 1.90$ a day (2011 PPP), % of population in India, https://data.worldbank.org/indicator/SI.POV.DDAY?end=2013&locations=IN&start=1981&view=chart (accessed on 30.03.18)
- 2016a: GDP (Current US$) of India, https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2016&locations=IN&start=1991 (accessed on 30.03.18)
- 2016b: GDP per capita, PPP (constant 2011 international $) of India, https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?locations=IN (accessed on 30.03.18)
- 2017a: Employment in agriculture (% of total employment), https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=IN (accessed on 01.05.18)
- 2017b: Employment in agriculture, female (% of female employment), https://data.worldbank.org/indicator/SL.AGR.EMPL.FE.ZS?locations=IN (accessed on 01.05.18)
- 2017c: Employment in agriculture, male (% of male employment), https://data.worldbank.org/indicator/SL.AGR.EMPL.MA.ZS?locations=IN (accessed on 01.05.18)

World Economic Forum (WEF) 2017: The Global Gender Gap Report, http://www3.weforum.org/docs/WEF_GGGR_2017.pdf (accessed on 09.02.18)

World Health Organization (WHO) 2013: Media centre, Child marriages: 39000 every day, http://www.who.int/mediacentre/news/releases/2013/child_marriage_20130307/en/ (accessed on 06.02.18)

World Health Organization (WHO) and United Nations Children's Fund (UNICEF)

- 2015: Progress on Sanitation and Drinking Water, https://data.unicef.org/wp-content/uploads/2015/12/Progress-on-Sanitation-and-Drinking-Water_234.pdf (accessed on 08.02.18)
- 2017: Progress on Drinking Water, Sanitation and Hygiene, http://apps.who.int/iris/bitstream/10665/258617/1/9789241512893-eng.pdf?ua=1 (accessed on 08.02.18)
- 2018: Joint Monitoring Program for Water Supply, Sanitation and Hygiene (JMP) Databank, https://washdata.org/data (accessed on 08.02.18)