



Republic of Yemen



Republic of Yemen NATIONAL REPORT

**Third United Nations Conference on Housing and Sustainable Urban Development
- HABITAT III -**

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Introduction

On behalf of the Government of Yemen, we are pleased to share with our readers the Yemen National Report submitted to Third United Nations Conference on Housing and Sustainable Urban Development (Habitat III). Yemen's participation in this global conference comes at a time where the country is going through fierce conflicts that have caused until today massive human and physical losses. The situation has been aggravated with the escalation of political crisis and military turbulence experienced by Yemen. The 2016 Humanitarian Needs Overview published by UNOCHA estimates that a total of 19.3 million people in Yemen now require humanitarian assistance to ensure access to safe drinking water and sanitation, of whom 9.8 million are in need as a direct result of the conflict. In urban areas, more than 6 million people have seen their water supply disrupted or cut due to conflict, and rural water supply schemes have stopped serving 2 million people

The conflicts in Yemen are adding more strain on the country's overall poor performance, including the fragile state, weak governance, deteriorated socio-economic situation, increased pollution and depleted services and infrastructure.

It is worth mentioning that during the past two decades, before political unrest and turmoil's the country has accomplished significant progress in various sectors, mainly: infrastructure development, urban planning reforms, decentralization, slum upgrading and housing provision. The armed conflicts came to put halt to all this progress and driving the country backward with the massive losses inflicted on the lives and livelihoods on already impoverished people.

In this context, the key future challenges that should be addressed relate to peace and stability. Once the conflict is terminated, the country should be going through a nationwide reconstruction operation, which should take into consideration avoiding past mistakes and building cities and towns that are safer, more inclusive, resilient and sustainable.

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Abbreviations

ACT	: Aden Container Terminal
AFPPF	: Agricultural and Fisheries Production Promotion Fund
AFZ	: Aden Free Zone
CBD	: UN Convention on Biological Diversity
CCD	: Convention to Combat Desertification
CCTV	: Closed Circuit Television
CDS	: City Development Strategy
CDM	: Clean Development Mechanism
CSO	: Civil Society Organization
CSP	: Concentrated Solar Power
CTMS	: Comprehensive Traffic Management Study
CEDAW	: Convention to Eliminate all Forms of Discrimination against Women
DPPR	: Development Plan for Poverty Reduction
ECDF	: Emergency Capacity Development Facility
EPA	: Environment Protection Authority
GIS	: Geographical Information System
GoY	: Government of Yemen
IFAD	: International Fund for Agricultural Development
GALSUP	: General Authority for Lands, Survey and Urban Planning
GEF	: Global Environment Facility
GHG	: Greenhouse Gas
GIZ	: Die Deutsche Gesellschaft für Internationale Zusammenarbeit
IDPs	: Internally Displaced Persons
ILO	: International Labour Organization
IWRM	: Integrated Water Resources Management
LEDS	: Low-Emission Development Strategy
LIWP	: Labor-Intensive Works Program
MoLA	: Ministry of Local Authorities
MoPIC	: Ministry of Planning and International Cooperation
MoPWH	: Ministry of Public Works and Highways
MoTEVT	: Ministry of Technical Education and Vocational Training
MoWE	: Minister of Water and Environment
NDC	: National Dialogue Committee
NAPA	: National Adaptation Program of Action
NHDS	: National Health and Demographic Survey
NLP	: National Land Policy
NUO	: National Urban Observatory
NSDHEY	: National Strategy for the Development of Higher Education
NWSSIP	: National Water Sector Strategy and Investment Program
UNOCHA	: United Nations Office for the Coordination of Humanitarian Affairs
OPEC	: Organization of the Petroleum Exporting Countries

PARE	: Public Authority of Rural Electrification
PCDP	: Port Cities Development Programme
PEC	: Public Electricity Corporation
PWP	: Public Works Project
SLREA	: State Lands and Real Estate Authority
SWF	: Social Welfare Fund
TMC	: Traffic Management Center
RAP	: Rural Access Program
REPS	: Rural Electrification Policy Statement
REREDP	: Rural Electrification and Renewable Energy Development Project
SCWA	: Supreme Council for Women Affairs
SFD	: Social Fund for Development
SHS	: Solar Home Systems
SWM	: Solid Waste Management
UNFCCC	: United Nations Framework Convention on Climate Change
UNFP	: United Nations Population Fund
UNDP	: United Nations Development Programme
UNHCR	: United Nations High Commissioner for Refugees
UNISDR	: United Nations Office for Disaster Risk Reduction
USAID	: The United States Agency for International Development
WNC	: Women National Committee
YEAP	: Youth Employment Action Plan

I. Urban Demographic Issues and Challenges

1. Managing rapid urbanization

Yemen's demography is characterized by a high population growth rate, reaching up to 3 % per annum. Indeed, it is one of the highest rates worldwide. According to the 2004 Population, Housing and Establishment Census, the total resident population counted 19,685,161 inhabitants. In 2010, this figure increased to 23,154,000 inhabitants. The population projections for the period 2005-2025 estimate that Yemen population will reach 34 million inhabitants.

On the other hand, and despite these projections, the fertility rate in Yemen has declined over the past fifteen years. From 1994 to 1997, the birth per female decreased in average from 7.4 births to 6.5 births respectively. The 2004 Census showed an additional decrease reaching 6.1 birth per female. Additionally, the 2013 National Health and Demographic Survey (NHDS) indicates further birth decrease reaching 4.4 births per female (3.2 birth per female in urban areas compared to 5.1 birth per female in rural areas), as detailed in Table (1) below. This decreasing trend in the fertility rate is due to a number of reasons, mainly: higher age of marriage, improved girls access to education and family planning methods.

Table (1): Total Rate of Fertility 1995-2013

Resident Area	1994 Census	1997 Demographic Survey	2004 Census	2013 Demographic Survey
Urban	6.2	5.0	4.8	3.3
Rural	7.8	7.0	6.7	5.1
Total	7.4	6.5	6.1	4.4

Source: Demographic Characteristics Population of the Republic of Yemen, Sheba Center for Strategic Studies, January 2010 and National Health and Demographic Survey 2013

In 2010, More than 70% of Yemen population lived in rural areas (in more than 130 thousand rural villages and localities) and around 29% are urban dwellers (living in 3,642 urban centers). Though predominantly rural, Yemen is experiencing rapid urbanization fueled by high population growth and rapid rural to-urban migration. Population projections show that the percentage of people living in urban areas will increase to reach 56.5% in 2050. Urban dwellers are primarily settled in key urban agglomerations like Aden, Al-Hodeidah, Al Mukalla, Ibb, Sana'a and Taiz. Being the main agricultural regions of the country, together the urban areas of Sana'a, Ibb, Taiz and Al-Hodeidah encompass the largest proportion of Yemen's population.

According to the 2004 Census, one of the main characteristics of Yemen's population is the unbalanced geographical distribution. 43% of the country's population is located in four out of the 21 governorates (including the Capital Secretariat, Sana'a). Taiz Governorate encompasses the largest number of population (12% of the total resident population), followed by Al-Hodeidah (11%), Ibb (11%) and the Capital Secretariat of Sana'a (9%). Other smaller governorates such as Al-Maharah, Marib and Raymah are almost depopulated, as they comprise respectively 0.5%, 1% and 2% of Yemen total population.

The two most densely populated regions are the two urban agglomerations of Aden and the Capital Sana'a, reaching 1,655 inhabitant/km² and 714 inhabitant/ km².

Being a central political and socio-economic pole, the capital Sana'a has seen, during the past two decades, a remarkable increase in its urban population. Recent figures show that while in 1995 the percentage of urban population in Sana'a urban agglomeration was 28,9%, it increased in 2015 in order to reach 33,5%. Forecasts show that the growth rate of Sana'a's population should remain very high in the future (about 4% annually). The other main urban agglomerations did not follow this same trend as shown in Table (2).

Table (2): % of urban population residing in Yemen's main urban agglomerations

	1995	2000	2005	2010	2015
Aden	11,4	10,7	10,3	10,1	10,0
Al-Hodeidah	8,5	7,7	7,2	6,8	6,4
Al-Mukalla	2,7	3,0	3,2	3,6	4,1
Ibb	3,0	3,4	3,8	4,4	5,1

Source: World Urbanization Prospects 2014, http://esa.un.org/unpd/wup/CD-ROM/WUP2014-F15-Percentage_Urban_in_Cities.xls

Rapid population growth is considered one of the major challenges to development in Yemen, which is adding more strain on the scarce natural resources, especially water, and the already weak socio-economic set-up. In order to address these challenges, the Government of Yemen (GoY) has initiated a number of national strategies and plans, such as the National Population Policy, the National Reproductive Health Strategy (2011-2015), the Fourth Five-Year Socio-Economic Development Plan for Poverty Reduction (2011-2015) and Rural Development Strategy (2005).

Rural-urban disparities in development investments have further contributed to the impoverishment of the already poor rural people. More than half of the population that is living in rural areas is faced with complete deprivation. Poverty is manifested through declined socio-economic situation, high unemployment, low education attainment, poor infrastructure as well as scarcity of water resources.

2. Managing rural-urban linkages

The geographical dispersion of Yemen population is one of the main features of the country. As mentioned previously, while rural people live in 130 thousand villages and localities, urban dwellers are distributed to 3,642 urban centers (World Bank) This has implications on various levels, and most notably on service provision and accessibility. In fact, the under-developed state of roads infrastructure is one of the main factors causing the isolation of rural people, limiting their access to services and economic opportunities as well as hampering the movement of people and goods.

Migration from the rural to urban areas is a key feature of Yemen's urban setting. Increased poverty rates in rural areas, absence of employment opportunities and other climate-related factors (water scarcity, drought, natural disasters...) are considered the main reasons behind the increasing trend of rural migration. This trend touches in specific the youth segment of the society. Available estimates indicate that Sana'a City, the historical and capital city, is the main destination of internal migrants. Other main receiving destinations include Aden governorate, followed by Al- Hodeidah, Al-Mahrah, Al- Jawf, Hadramout, Shabwah and Saadah due to initiation of various projects (oil discovery and some investment projects).

It is worth noting that the recent armed conflicts lead to a "reverse" population movement from main cities (Sana'a, Aden and Taiz) to rural areas transforming them into hosting areas for Internally Displaced Persons (IDPs). The influx of displaced people is putting additional strain on existing services and infrastructure that are already scarce or depleted.

The GoY has been directly addressing this issue through a number of projects, such as the Rural Access Program (RAP) that started in 2001, the Social Fund for Development (SFD) and IFAD, improve small-scale village access tracks through participatory and labor-intensive work methods. The RAP program comprised of three phases; Phase I (2001-2005), Phase II (2006-2010) and Phase III (2011-2014)¹. It was successful in mobilizing financial resources from various sources to implement road projects in various governorates (www.rapyemen.org).

Other GoY main interventions to promote rural urban linkages dealt with road networks. During

¹ Republic of Yemen; Rural Access Program Central Management Office, Sectorial Environment Assessment, Volume 1, 11 November 2009.

the past two decades, the GoY succeeded in creating a network of modern paved roads linking most of the main cities and governorates, particularly in the densely populated and mountainous western part of the country. This network has grown from only about 5,000 km in 1990 to about 14,000 km in 2010. By the end of 2013, Yemen has substantially expanded its paved roads to about 17,100 km representing about 20 to 22% of the total roads in Yemen, which is estimated to around 80,000 km². However, it is worth mentioning that Yemen's paved road density remains very low, estimated between 0.6-0.8 Km per 1,000 inhabitants.

Despite the significant progress in the sector of road networks (Table 3), a number of challenges emerged, mainly the higher transportation costs for Yemenis in general and for those living in remote and mountainous rural areas in particular. The poor access to markets, employment and services in many areas and poor road traffic safety pose a serious challenge to economic and social development and to government's efforts to alleviate poverty and reducing unemployment.

With only 5,500 km of rural roads (11%) being paved, Yemen's rural roads are still far from serving all the rural population. By end of 2009, the total surface of accomplished rural roads was 1,104 km in 14 governorates, mostly concentrated in the 6 governorates of Ibb, Hodeida, Taize, Ameran, Hajeh and Hadarmout, which represented 73.8% of the total surface of rural roads.

Table (3): Status of the Road Network

Roads that are paved or being paved	Existent (km)	Under construction km
International	3,693	172
Main	5,152	1,015
Secondary and Rural	6,483	8,594
Total of paved roads	15,328	12,781
Other earth roads*	44,000	0
Total	59,328	9,738

Source: MPWH, Road Sector, <http://www.mpwh-ye.net/en/website/sectors/detail.php?ID=1453&lang=ar>

* Road Asset Management Project, World Bank 2013

More recently, the GoY, with World Bank financial support, launched in 2014 a US\$133 million ambitious plan to connect the northern and southern parts of the country with a 710 km highway. The largest ever infrastructure project in Yemen's history will play a vital role in the country's transition by targeting the root causes of instability, such as lack of access to economic opportunities and poor national integration, and rebuilding the country's social and economic base. In addition, together with the Saudi Fund for Development (a total grant of US\$320 million), the World Bank's Corridor Highway Project, will build 140 km of road linking the port city of Aden with Taiz. This initial stretch of highway will connect two areas of the former South and North Yemen, bridging one of the country's main political fault lines, and cross three governorates where one fifth of the country's poor are located. The Bank's Corridor Highway project is expected to be completed within three to four years, and create around 4,000 jobs (the equivalent of 1.28 million person/days of work)³.

3. Addressing urban youth needs

Yemen has a huge youth bulge. As mentioned previously, while 42.4% of its population is below the age of 15, it is estimated that 23.2% of the population belongs to the youth category falling in the age bracket between 15 and 24 years. This is primarily due to the country's high fertility rates requiring additional 700,000 health and education services and 300,000 new jobs

² There are substantially geographical differences between governorates in length of asphalt roads. Hadarmout comes first with 2,842 KM of asphalted roads (about 16.6%), followed by Sana'a, Taiz, Hodeida, Shabwah, Al-Maharah and Amran.

³ <http://www.worldbank.org/en/news/press-release/2014/06/02/world-banks-commits-133-million-grant-to-launch-yemens-largest-ever-infrastructure-project>.

every year⁴.

Challenges of depleting water resources, a stagnant rate of economic growth and rising unemployment are particularly acute amongst youth and educated women. Youth unemployment remains a critical development challenge facing Yemen. In fact, the unemployment rate is 35% in Yemen and is plagued by low productivity, especially in the informal sector. Estimates show that the unemployment rate of people aged 15–24 years who live in urban areas fluctuates at around 30%.

As a response, the GoY has formulated a number of strategies and plans⁵, the latest one being the National Children and Youth Strategy (2006-2015), which aims to address youth unemployment, improve youth inclusion and participation, provide more options for leisure activities and discourage early marriage. The strategy was developed through adopting the Life–Cycle approach⁶, addressing the needs of children and youth according to the three life stages: 0-5, 6-14 and 15-24 years. The strategy proposes four lines of interventions for the youth age group (15-24 years):

1. Creating a National Youth Employment Environment and Plan;
2. Strengthening National Identity, Youth Inclusion and Participation;
3. Increasing Leisure Options and Creating Child/Youth Friendly Urban Planning;
4. Preventing Early Pregnancy and Reducing the Risk

A Youth Employment Action Plan (YEAP)⁷ was formulated by the GoY with the support of UNDP, through its Emergency Capacity Development Facility (ECDF). With a total budget of US\$ 948 million over the period of 2014-2016. The YEAP seeks to increase youth employment opportunities and to provide decent productive jobs especially for young people entering the labour market every year. As such, the YEAP interventions are classified under three main pillars:

1. Creating immediate jobs through employment intensive programs;
2. Building the youth capacity and promoting the role of job rich sectors in increasing youth employment; and
3. Facilitating young women and men transition to domestic and external labor markets.

Considering the importance of technical and vocational training as a vehicle for youth development, a special Ministry (Ministry of Technical Education and Vocational Training - MOTEVT) was re-established in 2001 and The National Strategy for Technical Education and Vocational Training 2006-2014 was approved by the GoY. The main objective of this strategy is to increase, by 2014, the enrollment capacity in technical and vocational education to 15% out of the total number of graduate students in primary and secondary schooling. This is sought to be accomplished through the setup of 219 vocational training centers all over Yemen.

The MOTEVT has been working with the World Bank, the International Labour Organisation (ILO) and the Islamic Bank to refurbish existing vocational centres and to establish new ones. Other donor responses have included programs which aim to increase access to education by building schools, providing training and incentives to female teachers in rural areas, and providing literacy and skills development at basic, higher and adult education levels.

In the higher education sector; a National Strategy for the Development of Higher Education 2006-2014 (NSDHEY) was formulated. The strategy aimed at creating a higher education system offering broad participation while maintaining the quality and focuses on four areas of reform: governance, finance, quality, and diversification. To ensure the achievement of the

⁴ Yemen UNDAF, 2012-2015.

⁵ The National Strategy for Youth and Sport 2000-2004 and the National Strategy for Youth Integration in Sport.

⁶ This is an approach that takes into account the vulnerabilities and opportunities that children and young people face over the life-cycle period, and the selection of appropriate priority interventions aimed at critical life stages that will create cumulative intergenerational positive effects.

⁷ http://www.undp.org/content/dam/yemen/DemDov/Docs/UNDP-YEM-YEAP_EN_Final.pdf

quality objective, the GoY established in 2009 the Academic Accreditation and Quality Assurance Council.

4. Responding to the needs of the aged

Yemen is classified as a slow ageing country. Population projections show that in 2015, the size of population aged 60 years or over is 1,254,000 people and would increase in 2030 to reach 1,939,000 people. These figures represent respectively 4,7% and 5,3% of the total population⁸. Typically, this indicates that there is low dependency ratio and hence, the country is less pressured to provide for older age groups.

Confronted with the challenge of high fertility rates, Yemen does not consider the aged people as a national priority issue for the short and medium terms. As such, the country does not have a formal institutional set up (such as a national committee) addressing the needs of the aged, nor does it have a national policy or a program addressing this particular matter. However, it is worth noting the in some instances, ageing concerns are integrated within existing national development plans and poverty reduction strategies. Additionally, concerned ministries such as the Ministry of Social Affairs and Labor, the Ministry of Health provide, when needed, necessary services for elderly people. For instance, the Ministry of Social Affairs has recently been working on improving the quality of life for aged population by establishing elderly care hostel. One has already been established in Aden city, however, due to cultural and traditional reasons, Yemeni people refrain from keeping their aged family member in those hostels, and rather retain them at home with extended family members.

5. Integrating gender in urban development

Involving women in cultural production and expanding their chances for education and their roles in building up the society will give quick returns, in terms of expanding the production and creativity base, improve health and education, and contribute effectively in controlling population growth.

Women in Yemen represent around half of the population. Despite their significant size, the overall women situation has declined. This is reflected in the World Economic Forum's Global Gender Gap Index, where Yemen has consistently been ranked last in 2007, 2008, 2009 and 2010. The situation is further exacerbated by the steady increase in the population, early marriages and high rates of fertility.

In fact, the absence of a legal minimum age for marriage is one of predominant social practices that is obstructing women advancement in Yemen. Studies showed that 14% of women aged 15 - 49 married before the age of 15 and 32% of women aged 20 - 24 married before age 18. The early marriage phenomena do not only have negative implications on women advancement but also on the children's health, gender equality, women's access to education and female participation in society. However, it is worth noting that during the past decade, the trend of early marriage has decreased, and late marriage has more widely been practiced, especially in cities and urban settings.

Nevertheless, by signing international conventions (the Convention to Eliminate all Forms of Discrimination against Women-CEDAW and Beijing Platform of Action) and other related human rights conventions, the GoY is committed to remove barriers obstructing women advancement. As such, a number of legal, institutional and operational actions have been implemented during the past years, giving gender issues greater priority in public policy. Those included among others:

- Forming the Women National Committee (WNC), a governmental mechanism that was established in 1996 under the supervision of the Prime Minister Office to adopt Beijing outcomes.

⁸ World Population Ageing 2015, United Nations Department of Economic and Social Affairs, Population Division.

- Establishing the Supreme Council for Women Affairs (SCWA). Chaired by the Prime Minister, the Council was restructured in 2003 to comprise: seven ministers and one deputy minister, private sector representatives, six female personalities among which is the WNC chairperson, her deputy and coordinators of the WNC in all governorates. The Council strives to integrate women's issues in nationwide policies and to enhance women's status in the economic, social, cultural and political domains.
- Amendments of discriminative articles of laws related to labor, personal statues, prison management and civil registration.
- Formulating Yemen Women Development Strategy (the most recent one expands over the period 2006-2015).
- Increasing women participation in political life, through granting her the equal voting right, to candidacy for the Parliament and local councils. Still, women representation in the political sphere remains limited: the 2014 newly established government comprises only four female ministers, the parliament has one female seat (out of 301 seats), two seats in the Shoura Council and 38 seats in local councils.
- Establishing women directorates in a number of ministries with the aim of mainstreaming gender issues within existing and planned government development plans and programmes.
- The Finance Ministry had created channels for gender-responsive budgeting, and the 2006-2010 General Development and Poverty Eradication Plan, for the first time in Yemen's history, had incorporated strategies to increase women's political participation and combat violence against women.
- In cooperation with the International Labour Organization (ILO) and the United Nations Population Fund (UNFPA), the Yemeni Government had carried out a gender auditing process in six major Government sectors, in order to evaluate the level of gender mainstreaming in policies, programmes and sectors.

Though sharing a number of similar issues and challenges, the overall situation of women in urban areas is relatively better than of those living in rural areas.

- Urban settings provide more outlets for women who wish to engage in paid work. Available studies show that women participate in the workforce in urban areas at almost three times the rate in rural areas. Urban women typically work for pay, still, unemployment affects nearly one urban woman in eight. Urban men also struggle with unemployment, but at less than half the rate of urban women.
- Urban areas offer better educational opportunities to men and women.
- A safe, efficient and reliable urban transportation network facilitates women access to educational and economic opportunities. While the roads and transportation networks are more developed in urban than rural areas, the poor roads infrastructure in the urban peripheries (such as Sana'a) negatively impact the ability of women to access even the most basic services, including education and employment. This would result in high rates of female illiteracy and unemployment.
- Yemeni rural and urban women have access to land and property. Most of the key traditional Islamic legal materials support women's right to acquire, hold, use, administer and dispose of property. However, this is not the case when it comes to reality as women have limited access to land property. In many cases they prefer to transfer their right to their husband's family in order to be protected and to guarantee their future. Even in inheritance under the Shari 'a law, women enjoy fewer rights under the Islamic compulsory succession rules compared to males. In the customary Yemeni law women are not even entitled to inherit land but they are going to receive a small amount of money. In this regard, land right to women should be protected in order to effectively reduce poverty in the rural and peri-urban areas.

6. Challenges experienced and lessons learnt

Yemen's high population growth represents a main nationwide development challenge. Economically, a significant portion of economic growth is allocated to meet the increasing population growth rates, with limited investment in meeting the economic needs of the population. Additionally, the increasing population growth rate is a driving force for rural-urban migration. This is not only putting pressure on available services but also leading to the proliferation of slums and informal settlements.

Urbanization is becoming a serious challenge in Yemen considering the rapid growth cities like Sana'a, Aden, Mukalla and Taiz have witnessed during the past decades. The urban transition that the country is going through shall require sound urban planning policies to manage the rapid urbanization trend that is fast emerging as a considerable national challenge.

Cities in Yemen are the location of much economic activity and wealth creation. However, urbanization in Yemen has occurred in the context of weak management and financing structures, poor socio-economic performance strained by recurring conflicts causing massive population movements. All these factors have constrained the capacities of cities to provide the needed services and to fully exploit the various benefits that Yemeni cities can offer.

Yemen's historic cities, some of which are classified as world heritage sites (Sana'a, Shibam/Hadramout/ Zabid), host great economic and sociocultural potential. It is important, both for the identity of the country and the development of its 'second' and 'third' cities, that this potential is harnessed. These centers are under threat as a result of poverty, decay, inappropriate modernization and failed transformation processes. While the mandated General Organization for Preservation of Historic Cities in Yemen (GOPHCY) faces structural deficits and lacks expertise, coordination between the authorities and other stakeholders has not always been appropriate. The unrest in the country, which has been ongoing since 2011, has led to a further weakening of institutions and alarming developments in the country's historic cities. As a direct consequence, the situation with regard to the protection of historic buildings and monuments in the world heritage sites has become increasingly alarming and has been repeatedly criticized by UNESCO. A National Strategy for the Preservation of the Historic Cities, Sites and Monuments 2016 – 2020 has been proposed, however, the implementation of the first year action plan has been limited due to dwindling urban management and preservation capacities, including lack of financial resources.

Although the various national policies, strategies and programmes did produce in some instances concrete results in a number of fields, such as the construction of roads and addressing the needs of women and youth, a number of challenges have been experienced, detailed as follows:

- Rapid urbanization took place without a guiding national urban planning policy framework. Cities like Sana'a and Aden have witnessed dramatic demographic growth that was not accompanied by sound urban planning strategies. In addition to the increasing rates of rural migration, population movements and displacement have increased during the past two years due to the escalation of conflicts.
- Unbalanced regional investments have increased the divide between different regions and between the rural and the urban and hence, increasing the isolation of remote rural areas. The road constructions, though essential to promote rural-urban linkages, remains sporadic when they occur without guiding urban policies and in the absence of sound urban management systems. As such, the need arises to develop integrated transport systems to promote linkages between the rural and the urban and to facilitate access of poor male and female rural and urban periphery residents to urban markets, services, and economic opportunities. Urban areas when well managed, contribute significantly to sustained national economic improvement and broad-based social welfare gains. The development of urban areas is closely tied to the rural economy through the exchange of

labor, goods, services, information and technology, capital, and social transactions that benefit residents in both locations.

- The provision of care for the elderly remains inadequate and the adopted approach is more welfare-based, rather than developmental.
- Increase in the population, early marriages and high fertility rates are key factors that are constraining women advancement in Yemen. Although gender-related challenges have been addressed by the GoY through various policies and programmes, however, the gender gap remains significant in the various socio-economic, educational, health and political spheres. Article 19 of the Constitution guarantees equal opportunity to all citizens in the economic sphere, and Articles 5 and 42 of the Labor Law affirm that women have equal rights in relation to employment, wages, training and rehabilitation, and social insurance. Yet, these principles of equality are in sharp contrast to the realities of women's lives. Strict gender norms (such as those that limit women's role and identity to domestic work), religious traditions, mobility restrictions, limited education, and concerns for women's honor and safety mean that women's economic activities are often conducted in the private sphere of the home. Overcoming these challenges would require accompanying gender policies, strategies and programmes with comprehensive education and awareness raising campaigns targeting the various segments of the society. Improving the status of women particularly with regards to decision-making and integrating them into the mainstream economy has the potential to yield significant benefits and progress
- Yemen is facing an explosive youth bulge. Despite their considerable size (24% of the population is aged between 15 and 24 years), youth face the hard conditions of low educational attainment and high unemployment rate. As such, the need arises to increase and strengthen educational and economic development opportunities for large youth cohorts, with a focus on improving female participation. Additionally, the overall country development prospects cannot be realized unless it reflects the needs and aspirations of the youth segment of the society.

7. Future challenges and issues to be addressed by a New Urban Agenda

In 2014, the Human Development Index ranked Yemen 154th out of 187 countries. This ranking reflected low average years of schooling among its population, modest life expectancies and low per capita income. Yemen has high population growth, low economic growth and limited natural resources, with water a worsening challenge for the country associated with climate change. Since the creation of a unified Yemen in 1990, the country has been going through cycles of conflicts and political crises.

Since uprising in 2011, the country faced a turmoil during political transition that escalated in 2015 into massive armed conflicts, causing massive human and physical losses. In this context, the key future challenges and issues that should be addressed relate to peace and stability. Once the conflict is terminated, the country should be going through a nationwide reconstruction operation, which should take into consideration avoiding past mistakes and building cities and towns that are safer, more inclusive, resilient and sustainable. This step should be complemented by necessary regulatory and policy reforms, particularly national urban policies that would shape the future of Yemen cities hereby addressing the issue of planned city extensions as well as urban rehabilitation of existing neighbourhoods. Moreover, well laid out urban planning and design should guide the future redevelopment and growth of cities, alongside a sound economic model for financing good urban governance based on a sound legislative framework. National urban policies should be developed alongside a system of cities, hereby addressing development requirements of the main cities in Yemen as well as secondary cities and the rural hinterland. Basic services and infrastructure as well as job opportunities are to be made available to all residents alike.

II. Land and Urban Planning

1. Ensuring Sustainable Urban Planning and Design

While the country lacks a national urban policy, Yemen has a number of other national policies and frameworks that guide indirectly the country planning. Those include among others: Yemen Strategic Vision 2025 as well as the Five Year Economic and Social Development Plan for Poverty Reduction (4 plans)⁹.

Yemen Strategic Vision 2025 summarizes the Government future approach in dealing with the country's current urban challenges, which include among others: limited natural resources, topped-off by the small cultivable area, the scarcity of water in the populous habitats, with the continuing increase of the population, especially in the Central Highlands. As such, to overcome these problems, the GoY vision capitalizes on the development of cities and regions extending along the Yemeni coastline of approximately 2,000 km, from the Town of Meidi in the North to the Town of Hawf (Al-Mahra) in the East. By developing those cities and regions, the Government expects to achieve a more balanced population and geographical distribution that would alleviate the present urban concentration and migration to urban areas that has already burdened the available services and facilities.

Key reforms in the urban planning sector in Yemen include among others: 1) issuing urban planning law number 20 of year 1995, and 2) restructuring of the Ministry of Public Works and Highways alongside the allocation of a sector dedicated to Housing and Urban Planning with the main responsibilities consisting in the provision of assistance to low-income housing, land at affordable cost and by implementing basic infrastructure plans. The Urban Planning section's main objective is developing the National Master Plan and guidelines for the development of all Yemen cities and towns.

Physical and land use planning in Yemen is conducted at three levels: Master, Regional and Detail Planning and their final outcome is subdivision plans. However, in the absence of a universal land inventory or registration system, the planning framework remains undeveloped and uncoordinated. Local authorities are responsible for discussing and approving the projects of public urban construction and environmental plans before submitting them to the related central government agencies for approval and monitoring their implementation according to the Urban Planning Law. Due to capacity constraints, most of the work is still done by the General Authority for Lands, Survey and Urban Planning (GALSUP), with limited cross-sectoral coordination.

The overall planning framework in Yemen is un-developed and un-coordinated. In 2006, in an attempt to overcome the lack of coordination between several governmental bodies involved in urban management functions, a Presidential Decree No. 35 establishing the General Authority for Lands, Survey and Urban Planning (GALSUP) was issued. Previously, urban planning was the mandate of the Ministry of Public Works and Highways (MoPWH) through the Sector of housing and urban planning and through its executive offices in the local authorities. With the new establishment of GALSUP, the planning role has been placed centrally in contrary to the Local Authorities Law¹⁰.

As such, the municipal urban planning office, previously affiliated to Ministry of Public Works and currently under Law number 82 of 2009, was issued organizing the operation of GALSUP, which is directly supervised by the Prime Minister. As a result, ten GALSUP offices have

⁹ The Third (2006-2010) and the Forth (2011-2015) plans were called the 5-year Economic and Social Development Plan for Poverty Reduction (DPPR).

¹⁰ Urban planning and management activities are undertaken in a context of a decentralization legislation in Yemen. The Law No. 4, 2000 of Local Authorities has decentralized administrative and fiscal responsibilities, including urban planning and management activities from the central to the governorate and municipal/district levels.

opened in a number of districts and directorates, a total of 175 staff have been trained to carry out relevant work and tasks and necessary GIS equipment and tools were provided.

GALSUP has continued with its former limited mandate of designing detailed neighborhood plans, amending detailed plans to reflect the situation on the ground, and monitoring the implementation of the master plan and detailed subdivision plans, especially in ensuring the alignment of main roads.

Those deconcentrated departments of central ministries undertake most of the planning and execution of urban services projects. The structures are sectoral in nature, with each sector preparing their own master plans for investment without reference to one another, or as importantly, to resource availability and the economic consequences of their physical plans. In some cities, such as Aden for example, there are three unrelated master plans for various parts of the city including the new port and industrial zone which fail to integrate the infrastructure needs of the new economic projects with those of the rest of the city. In Sana'a, growth has occurred outside the areas designated by the existing master plan, in locations with access to infrastructure. The designated "growth" areas remain undeveloped due to lack of resources, and, yet, the physical planning response has been to further expand boundaries and build additional roads, to maintain normative notions of appropriate densities and land-use patterns which are divorced from existing realities.

With support from various donors, such as World Bank, Cities Alliance, GIZ, etc., the GoY has started implementing new planning frameworks using varied methodologies and approaches. As such, during the past ten years, City Development Strategies (CDS) have been initiated in four of Yemen's largest urban areas - Sana'a, Aden, Hodeidah, and Mukalla. With support from the Cities Alliance and the World Bank, the CDS process in each of these cities has brought together public and private sector leadership to assess the strengths and weaknesses of the city, think strategically about opportunities for equitable economic growth, develop a long-term vision, and draft a prioritized action plan. In all four cases, the CDS process has been coupled with revisions to the cities' master plans to ensure a strong link between economic development plans and infrastructure.

2. Improving urban land management, including addressing urban sprawl

The rapid rate of urbanization in Yemen over the past years has placed significant pressures on land, especially in Sana'a, which is particularly attractive for rural migrants as well as internally displaced people and refugees. The result is both very high land prices and a major problem in the form of uncontrolled land development. In addition, intense development pressures in urban areas have led to increased contestation of public (and private if land was transferred by the State) land ownership in peri-urban areas, especially by tribal claimants.

In 1995, Yemen issued a Law of Land and Real Estate No. 21 of 1995. The law provides for the classification of land (public, private, communal) and the terms of use, but it is mainly applied in urban areas. Land governance in rural areas is determined mainly by customary and Islamic law under the leadership of sheikhs (USAID 2010). Unfortunately, to date, Yemen lacks information regarding land classification (urban, rural or classified by type such as urban land, agricultural, uncultivated, desert, etc.). Additionally, information regarding land ownership State versus private versus Waqf) is lacking. Based on their analysis of maps and other information, the State Lands and Real Estate Authority (SLREA)¹¹ estimates that State-

¹¹ Was replaced in 2006 by the General Authority for Land Survey and Urban Planning (GALSUP). GALSUP is government entity responsible for the comprehensive management and administration of land in Yemen. It has consolidated authority over a number of functions formerly exercised by different entities; (i) Land survey, mapping and registration, formerly implemented by the Survey Authority and Land Registry, Presidency of the Council of Ministers; (ii) Management of State land and real estate, formerly under the State Land and Real Estate Authority, Presidency of the Council of Ministers; and (iii) Urban planning, formerly under the Urban Planning Sector, Ministry of Public Works and Highways (MOPWH).

owned lands roughly represent 90% of all lands in Yemen¹². The remaining 10% or so would include 5-9% in agricultural and cultivated lands, and 1-2% in urbanized lands covered by human settlements (cities and villages). According to SLREA, the State's ownership of agricultural and cultivated lands varies from one Governorate to another.

Land disputes are relatively common in Yemen because there is no system for authenticating land deeds and land documents, either formal or customary, and no national cadaster. However, both urban and rural landowners have a reasonable degree of tenure security with rights enforceable under either civil law or customary and Islamic law, respectively.

During the past two decades, Yemen's larger cities have spatially expanded outwards. Practically, all land available for urban expansion in the main upland cities (such as Sana'a, Taiz, and Ibb) are in private ownership, and there are very lively and mostly informal land markets active in each town. In fact, more than half of all land converted to urban use in the last 20 years is the result of uncontrolled and un-regulated informal land subdivision. The uncontrolled urban sprawl along with the absence of appropriate urban planning and regulation instruments resulted in very rapid proliferation of informal land development and housing construction. Much construction in Sana'a over the past decade has taken place in unplanned areas without building permits and in the absence of infrastructure and municipal services.

According to World Bank Policy Note on Urban Land and Administration (2005), access to urban land (both for investment and residential use) represents one of the most critical obstacles to growth as well as to poverty alleviation in Yemen and especially in its capital Sana'a. This is mainly due to high risks and transaction costs resulting from unclear and unenforceable property rights. The existing systems for administering land tenure security (namely through the two pillars of land registration and dispute resolution) and managing State-owned lands are fraught with many problems. As a matter of fact, addressing land disputes was considered one of the ten priority points that need to be tackled by the GoY. The 10 priority points (2009-10) was one of the most important initiatives led by the GoY, with the support of the USAID. Studies were carried out covering the 10 priority points by international consultant firms and the GoY allocated initially YR50 billion to start implementing those priorities¹³.

In May 2010, a draft National Land Policy (NLP) was finalized by a team of consultants¹⁴ and five policy studies were proposed¹⁵: i) Land Registration, ii) Information Technology and computerized Land Information System, iii) Land Tenure and Access to Land, iv) Public Land Inventory, and v) Institutional Responsibilities. The draft policy was submitted in 2012 for Government revision, no follow up action has been undertaken since then.

3. Enhancing urban and peri-urban food production

Agriculture and food production is a vital national economic sector providing job and income to over half of the country's active workforce, mostly living in rural areas. Agriculture's capacity is limited, mainly because of the scarcity of arable land—only 3% of the total area—and of water and the mismanagement of these resources. Other constraints include the low productivity of this sector, the limited diversification, and the lack of necessary infrastructure.

¹² This including: (i) desert lands; (ii) the so-called "dead" or non-valorized lands, in Arabic "Arady Mowat," which are considered State-owned and include undeveloped/uncultivated lands; (iii) mountains and slopes; (iv) unpopulated islands and beaches; (v) lands without identifiable owners or heirs; and (vi) some 70% of the so-called *marahak* or slopes receiving and channeling rainfall in agricultural areas.

¹³ The 10 priority points including resolving land disputes, providing jobs for Yemenis in countries of the GCC, reducing subsidies on oil derivatives, expediting oil explorations, rule of law, Aden master plan, the issue of water scarcity, and improving Yemen's image abroad. For this purpose, a coordination mechanism between the cabinet and the presidency was discussed to ensure proper follow up and monitoring.

¹⁴ Consultancy was carried out by Land Equity International for strengthening Land Management in Yemen. This Consultancy was under the World Bank project "Taiz Municipal Development and Flood Protection Project".

¹⁵ Developing Effective Policy and Planning in Yemen, Suleiman DABBAS, Serbia and Tony BURNS, Australia.

As result, the country has been facing a significant decrease in agricultural production resulting in food shortages, extremely high dependency on food imports, high unemployment, and increased poverty, hunger and malnutrition.

Although primarily concentrated in rural areas, the limited urban and peri-urban agriculture production is located in and around cities like Sanaa, Aden, Ibb, Hodeida and Taiz. Due to the rapid growth of Sana'a City and the increase of the area under irrigation, the deficit between water demand and water availability has continuously grown over the years. This over-exploitation has led to a continuous lowering of the groundwater table and the need to drill ever-deeper wells. As a result, water is becoming increasingly expensive and inaccessible to the wide majority of urban dwellers. Without water management measures, the depletion of the water will continue and will lead to severe economic and social implications.

Today, Yemen imports 90-95% of its staple foods (including 92% of cereals in 2010 because of increasing the imported quantity of cereals¹⁶), while local production accounts for around 20-25% of overall food availability. The country is ranked the 11th most food insecure country globally. Overall, one in three Yemenis are acutely hungry; they do not have sufficient resources to access nutritious food necessary for a healthy and productive life. It is worth noting that the expansion of qat growing is affecting negatively agricultural production due to the over-exploitation of water resources

The challenges faced by urban farmers are not different from those faced by the rural communities. However, the impact of food insecurity is magnified in rural areas¹⁷:

- 37% of the population is food insecure, compared with 18% in urban areas;
- High prevalence of moderate and severe child malnutrition. Child stunting and underweight affects 67% of children in rural areas, compared with 54% in urban area;
- Almost half of all children in rural areas are underweight, compared with 39% in urban areas.

To address food insecurity challenges as well as the depletion of water resources, the GoY embarked on a number of initiatives:

- The elaboration of the National Agriculture Sector Strategy (2012-2016);
- The establishment of a National Food Security Strategy (2011). One of the major objectives of this Strategy was the sustainability of the water resources as the water scarcity is the main challenge facing food security in Yemen. The strategy stressed on the importance of using of non-conventional water resources.
- The National Water Sector Strategy and Investment Program (NWSSIP). In 2008, the NWSSIP was updated for the period 2008 – 2015 emphasizing the importance of desalination of brackish water or seawater to be used for drinking.

With the on-going conflicts that are devastating Yemen, the implementation of those strategies and programmes have become problematic. The war has added more strain on the country's agricultural sector. It has severely disrupted livelihoods in the agriculture sector, reduced field activities, disrupted exports and damaged greenhouses – a major source of vegetable production in the northwest. Power outages and lack of fuel are affecting the storage and transport of perishable produce. High fuel prices are also causing irrigation, transport and marketing costs to soar, leaving farmers with higher production costs than profits. Fishing has also been highly affected by insecurity, lack of fuel and electricity which is causing spoilage, and market disruption (internal and exports).

¹⁶ The local production of cereals grew by 15.3% in average during 2005-2010, according to the Fourth Socio-Economic Development Plan (2011-2015).

¹⁷ Assessing Food Security in Yemen, Discussion Paper, International Food Policy Research Institute, May 2010.

4. Addressing urban mobility challenges

Sana'a is the largest and the most important economic city in Yemen. It has witnessed during the past two decades rapid urbanization accompanied by high population growth and rapid spatial expansion. Unfortunately, this trend has not been accompanied by sound urban management strategies, which reflected negatively on the city mobility. The inefficient public mobility systems have resulted in a high dependency on private motorized transport and other informal car-centered mobility, such as minibuses, minibuses and taxis that are considered affordable, efficient and convenient services.

The current legal framework for the regulation of city and inter-city transport is contained in Law 33 of 2003 which created an "open market" for passenger and freight transport services, replacing the previous monopolies held by syndicates.

From an institutional perspective, the urban transport sector in Sana'a city suffers from overlapping of responsibilities between three governmental entities, namely, Municipality of Sana'a, the Ministry of Transport, and the Ministry of Interior¹⁸, and coordination mechanisms between these three institutions is absent. The absence of specialized units in charge of urban transport planning and traffic management is another hindering factor obstructing the sound implementation of urban transport and traffic management functions. Recently, under the umbrella of the Ministry of Transport, a Land Transport Agency was established. However, the weak resources and limited capacities of this Agency hinder its sound operation¹⁹.

During the past decade, investments in Sana'a's roads improvements were significant. This contributed considerably in the increased capacity of major arteries benefiting mostly the outer urban area of the city, not the center whose roads network have reached saturation. However, the roads sector in Sana'a have been massively destructed by the on-going conflicts. A damage assessment is key to identify the rehabilitation and development of this sector.

Road safety is poor and accidents numerous. Reports from the Central Statistical Organization showed that Sana'a has the largest number of car accidents and fatalities when compared to other cities like Aden, Taiz, Hadramout and Al-Hodeidah. The annual average of reported vehicles accidents was 8,463 for the period 2011-2013, causing a 12,174 of human casualties and about 3,350 deaths. As illustrated in Table (4) below, a total of 4,889 car accidents occurred in Sana'a in 2010 causing the death of 478 people while 2,466 people were seriously injured.

Table (4): Traffic Accidents for Main Cities in Yemen in 2010

City	Accident	Fatalities	Seriouslyinjured	Minor injury
Sana'a	4889	478	2453	2466
Aden	1053	90	532	341
Taiz	1897	377	1046	1361
Hadramoot	321	53	151	304
Al-Hodeidah	1262	484	1383	596

Source: Central Statistical Organisation (CSO), 2011

Despite the essential role of walking for Sana'a's population, pedestrians' needs are poorly addressed. There is no continuity of pedestrian routes, insufficient sidewalks, poor lighting, and a general lack of secure street crossings. This affects in particular children, women, and persons with reduced mobility. A 2009 World Bank financed study conducted by Yemeni Center for Social Studies and Labor Research in nine neighborhoods in the city of Sana'a, showed that women choose walking and public transport for the majority or daily trips made in the city. The study showed a direct correlation between working women and the provision

¹⁸ The Traffic Department of the Ministry of the Interior (MOI) is the authority for vehicle inspections and for licensing transport vehicles and services, while the Ministry of Transport (MOT) is responsible mainly for transport policy and planning.

¹⁹ Urban Transport in Sana'a, Strategy Note, World Bank, 2010.

of better urban infrastructure, such as lighting, sidewalks, and access to public transit terminals. The highest rate of working women (15%) was found in the older neighborhoods of Sana'a, where such urban infrastructure is present and maintained. In peripheral areas, these rates are much lower (8%). Road infrastructure, such as pedestrian crossings, sidewalks and access to bus terminals, is inaccessible or nonexistent. Female interviews highlighted the importance for such infrastructure for making trips in the city possible.

5. Challenges experienced and lessons learnt

- Notwithstanding the significant efforts invested in the urban sector, cities in Yemen are developing sporadically with focus on short-term problem solving rather than long-term strategic planning. There is an urgent need to develop a national urban policy backed up by a strong political will to reforming the urban sector.
- All land-reform efforts remain incomplete if land governance aspects are not adequately addressed. Land registration in Yemen is a critical issue, especially in urban settings. In fact, according to the urban planning law, urban areas that are subject to development have to be registered before development takes place. Land parcels and the land area divided on the ground must be mapped or registered. A complex and unstable history of land issues, particularly relating to property laws, registration systems, adverse possession and land distribution have persuaded the majority of the population to disengage from the formal system. The strength and traditions of Yemeni social and cultural structures are what binds the current land practices followed by most people. A severe lack of trust in authority and lack of conformity to formal procedures exists and this fosters hybrid systems and informal dealings.
- Developing partnerships and coordination mechanisms among levels of Government, sectoral agencies, private sector and civil society are pre-requisites for effective land and urban planning sector.
- Institutional strengthening and through de-concentration of central Government land-related functions and operations to Governorate and district administrations will accomplish more efficient and cost-effective service delivery in the sectors of land and urban planning. This requires delegation of powers and administrative functions, while maintaining quality standard procedures and good governance management practices. Equally important will be management and communication systems, and technical infrastructure required in a modern functioning system.
- Simultaneous human resource development is necessary with any institutional restructuring and therefore the appointment of appropriately qualified and skilled staff in key areas of reform is essential. In addition, an emphasis should be placed on upgrading qualifications of qualified existing GALSUP staff in specific areas of land administration, strategic planning, urban planning, valuation, geodesy, surveying, cadastre and business administration.
- Food insecurity is one of the main challenges in Yemen. The urban and peri-urban food production system is badly threatened by rapid urbanization and the encroachment on agricultural and farming lands. Enforced regulatory frameworks to halt this trend is urgently required. While the DPPR aims to expand the agricultural sector, this is challenged by increasing frequency of drought, as well as deforestation, soil erosion, water scarcity and low agricultural productivity. Some of the recommended actions elaborated in Yemen Fourth Five-year Plan 2011-2015 include: 1) attaining high levels of food security based on local agricultural production, 2) support efforts to fight poverty in the rural community, 3) preservation of the environment and natural resources and activating the role of community participation to ensure sustainability, and 4) achieve sustainable growth in the fisheries sector through increased production while maintaining the fishery resources and development base, and enhance the sector's contribution to national food production.
- The urban transport system in Yemen suffers from considerable problems affecting its performance and efficiency. Overcoming those obstacles require a number of measures: 1) promoting institutional and strategic framework for urban transport planning and

management, 2) carrying out a road safety management capacity assessment, 3) developing traffic management and parking policies and 4) making available the needed financial resources and promoting a balanced financing of urban transport. Promoting road security measures to limit car accidents and human losses is an urgent requirement.

6. Future challenges and issues to be addressed by a New Urban Agenda

The political unrest and escalation of armed conflicts since 2015 will have strong future implications on the country's overall land and urban planning sector. Those challenges relate to:

- Massive destruction and considerable losses in human lives.
- Weakened rule of law and governance, which was further exacerbated during the conflict causing violations of urban planning laws and regulations.
- Increased population movements due to the displacement of 2.3 million people, about half of whom have settled in Aden, Taiz, Hajjah and Al Dhale'e governorates, pitting more strain on the scarce resources and limited services.
- Acute food security: before the crisis, given the country's dependence on food imports, declining oil revenues, and overall economic fragility, Yemen has been classified as one of the most food insecure countries worldwide. Due to the on-going crisis, this problem was dramatically aggravated affecting 14.4 million people, including 7.6 million who are severely food insecure, according to 2016 Humanitarian Needs Overview developed by OCHA.
- Restrictive mobility: it was exacerbated by the heavy damage inflicted on the road networks throughout the country affecting the lives and livelihoods of people of Yemen. The increasing prices of food and commodities is partly due to the disruption of the roads infrastructure networks, making it more difficult for people accessing their primary needs.

III. Environment and Urbanization

1. Addressing climate change

Yemen is not contributing into the anthropogenic GHG emissions but stands highly vulnerable to climate change-related impacts because of its fragile socio-economic development and inadequate adaptive capacity. In fact, evidences that could be associated with climate change have already started appearing. Over the last decade, the annual average temperature over the country has been noticeably increasing. Yemen has experienced frequent droughts in recent decades which caused food shortages and famine, and destruction of infrastructure and livelihoods.

Drought, temperature variability, and changes in precipitation regime can lead to disastrous consequences for agriculture and food security. Climate changes may imply degradation of agricultural lands, soils and terraces, desertification, which negatively affects agricultural incomes for local communities specifically and leads to national food insecurity as food production levels change. Higher sea temperatures and the rise of sea level are adversely affecting the coastal and marine environment resulting in coral bleaching and disappearance of some fish species in the landed catch. The country's coastal areas are exposed to annual monsoon cycles, which have led in recent years to several hurricanes that have swept over the country and have had devastating effects on people, infrastructure and livelihoods.

Yemen's National Adaptation Program of Action (NAPA) identified coastal areas along with water resources and agriculture as three main vulnerable areas to climate change. Yemen is endowed with a 2,200 km coastline along the Gulf of Aden, Arabian Sea and the Red Sea very large coastal area for a country of 527,970 square kilometers. Coastal areas and fisheries constitute a major source of employment and income in the poorest rural areas. Recognizing that the coast is already significantly stressed, the GoY and its donors have already invested

significant cost and effort in its management. Several donors (USAID, UNDP, the GEF/World Bank, etc.) have assisted the Government in developing the capacity to implement Integrated Coastal Area Management. All these efforts have laid a good basis for further development as the capacity at the local level, and the ability of the central government to advise local governments still need be strengthened, and this is particularly important since the recent political crises.

Yemen's water availability per capita is the lowest in the world. Extraction of groundwater has exceeded the level of replenishment capacity, causing water depletion. Since Yemen over-extracts an estimated 0.9 billion cubic meter of water each year from its deep aquifers, groundwater aquifers are declining one to seven meters each year. It is anticipated that climate change combined with high population growth, inadequate agricultural development and policies and a lack of law enforcement to regulate water will put continuing pressure on Yemen's water resources and contribute to its water crisis. The overexploitation of groundwater resources and the rising sea level due to climate change will result in increased salt-water intrusion, especially in coastal aquifers.

The threats to the water sector from a changing climate would have serious implications for agriculture. Climate change, including changes in average temperature, rainfall, floods, and drought, pose challenges for agricultural adaptation in a country in which water is already scarce and groundwater reserves are being rapidly depleted. Arable land constitutes only 3% of Yemen's land area; and two thirds of this are used for crops and livestock. The major problems related to land include soil erosion, loss of vegetative cover, deterioration of agricultural land and rangeland and loss of such areas due to the expansion of construction.

Desertification of agricultural land ranges from 3-5% annually, whereas the area of deteriorated land due, in part, to soil erosion and salinity is estimated to be 12 million hectares and another 3.8 million hectares, respectively.

Yemen ratified the UN Convention on Biological Diversity (CBD) for which it elaborated a Biological Diversity National Strategy and Plan of Action in 2005, the Convention to Combat Desertification (CCD) for which it did not elaborate a National Plan of Action, the Framework Convention on Climate Change (UNFCCC), and the Kyoto Protocol. Since the ratification and application of the UNFCCC and the Kyoto Protocol, considerable efforts have been made in establishing legislation, institutional and policy frameworks in order to fulfill the requirements of the Convention and the Protocol. Climate change concerns have been flagged in the fourth National Plan for Development and Poverty Reduction (DPPR 2011-2015), and the Joint Social and Economic Assessment for the Republic of Yemen (2012-2015). With support from UNDP, Yemen began in 2013 the preparation of a Low-Emission Development Strategy (LEDS) with the development of a roadmap.

In 2003, the Environment Protection Authority (EPA) was established with a mandate covering the setup of environmental policies and strategies, enforces standards for air and water pollution and land degradation, monitors environment, implement environment related activities, programs and projects, and coordinates national, regional and international action on environment protection in Yemen. As the UNFCCC Operational Focal Point, EPA is responsible for all climate change related activities. Additionally, the Ministry of Electricity (MoEE) has formulated in 2009 the National Strategy for Renewable Energy in 2009 as a way of systematically developing alternative sources of energy and promoting a renewable energy industry, and energy efficiency in Yemen.

In October 2008, Hadramout and Al-Maharah governorates suffered substantial damage as a result of tropical storm that is attributed to climate change. The storm caused heavy rainfall and devastating floods in several locations (16 districts) in both governorates, making them the two most heavily affected areas. The flash floods and surging water resulted in one of the largest natural disasters to hit Yemen in the last decade. Following the storm, the two governorates were declared disaster areas to enable emergency aid and subsequent reconstruction assistance.

With the support of a number of bilateral and multilateral organizations, Yemen implemented a number of projects related to climate change. Some of those projects include the following:

- Adaptation to Climate Change through Integrated Water Harvesting Technologies in Yemen. A UNDP project funded by GEF/LDCF that aims to reintroduce traditional and innovative water harvesting techniques to improve water availability to rain fed farms and pastoralists who are highly vulnerable to climate change;
- A number of climate relevant projects implemented by GIZ, including: 1) Conservation and Sustainable Use of Biodiversity (2011-2016), supporting the preparation, testing and further development of co-management approaches of natural resources at local level; and 2) Institutional development of the water sector (2006-2017), aiming at improving the implementation and steering capacity of relevant water institutions;
- Several climate relevant projects executed by IFAD, including: 1) Rural Growth Programme, that aims to reduce poverty and food insecurity and increase small farmers' resilience to the impact of climate change while stimulating sustainable economic growth for women and men in rural communities; and 2) Yemen Invest – Rural Employment Programme (2011-2016) that aims to improve the economic status of some 220,000 poor rural women and men by creating sustainable and diversified employment opportunities;

2. Disaster risk reduction

Yemen faces a range of different natural hazards the most important ones being earthquakes, flash floods, and land/ rockslides. According to the World Disasters Report 2000, more than 50,000 people are annually affected by disasters triggered by natural hazards in Yemen. Most of those affected belong to vulnerable segments of the society, including women and children.

Floods are the most important and recurring disaster in Yemen. Since the unification of the Arab Republic of Yemen and the People's Democratic Republic of Yemen in May 1990, Yemen suffered through 19 floods or flash floods. CRED's International Disaster Database (www.emdat.be/) ranked floods as the top four natural disasters in Yemen since 1990 with regard to economic damages. Floods also rank prominently with regard to killed persons (eight of the top 10 are floods) and affected people (nine of the top 10 are floods).

Specifically at risk is the city of Taiz. With 540,000 inhabitants, the city is yearly subject to severe seasonal flash flooding causing significant human and physical losses. Particularly vulnerable are the poorest urban dwellers who live near the flood zone in precarious dwellings made of wood, aluminum, and other scavenged materials. Funded by the World Bank, the Taiz Municipal Development and Flood Protection Project aimed to build flood protection structures that would channel floodwater to a catch basin south of the city, thereby protecting city residents and businesses. The project financed Yemen's first resettlement operation (2440 low-income families) to a model urban village, located at Al Birarah, which included access to decent housing, tenure security, and adequate services. Flood-protection infrastructure transformed major parts of Taiz city and has had an immediate and substantial impact on the lives of city residents in the affected areas (an estimated 10,000 households and 1,000 businesses were direct beneficiaries).

The Yemen government has realized that natural hazard poses a growing risk to its sustainable development and over the last decade it has taken some initial steps to address such risks.

- In 1997 the Council of Ministers issued decree No 52 to form a committee to prepare an approach for Disaster Management.
- In 2003 the Minister of Water and Environment (MoWE) issued decree No 28 to establish an Environmental Emergency Unit to initiate and coordinate the implementation of institutional capacities to face all aspects of Environmental Emergencies and Disasters.
- The Presidential Decree No 218, year 2005, about the by-law of MoWE also identifies the Environment Emergencies General Directorate's mandate, which allows the Environment

Emergencies Unit to direct and develop the environment emergencies and risk reduction procedures.

In 2005, the Ministry of Interior has developed a National Plan for Disaster Management, but this plan does not address disaster risk reduction. The Environment Emergencies Unit in the Ministry of Water and Environment is in charge of risk reduction and has worked to setup a national platform for Disaster Risk Reduction in coordination with the UNISDR. There is no national policy for disaster risk reduction and so far only scattered and uncoordinated advances in implementation of the National Plan for Disaster Management. A number of isolated initiatives have been undertaken on a project basis by different line ministries but with little sustainable improvement, partly due to a lack of clear indication of authority and responsibility for the different aspects of risk management. Some projects, like early warning systems, have been established with funding by international organizations, but they have not been maintained when funding has ended.

3. Reducing traffic congestion

During the past decade, the GoY made significant progress in terms of developing sound transportation and traffic measures. A number of national initiatives have received tremendous support from various bilateral and multilateral donor agencies, such as the Rural Access Programme (mentioned in section 2 of the report).

The issue of transportation and traffic has a key urban dimension in the particular context of a country like Yemen that has been witnessing rapid urban growth during the past decade. Main cities, like Sana'a, Aden, Taiz and others are particularly faced with challenges of traffic congestion. This is due to many reasons, mainly: 1) Poor public transportation system and 2) Absence of a national unit that is directly in charge and capable of carrying out the monitoring/evaluation of traffic safety activities.

As a result, urban dwellers heavily rely on the use of all kinds private vehicles, own cars, private transport, taxis, motorcycles, trucks and heavy equipment causing severe traffic congestion on major and internal roads between main and interior cities. Table (5) below shows the increasing numbers of car in Yemen during the years 2007 and 2008.

Table (5): The numbers of car in Yemen in 2007 and 2008

Year	Private car	Taxi	Other vehicles	Total
2007	273,867	97,766	250,521	622,154
2008	302,892	107,915	259,530	670,337

Source: Central Statistical Organisation (CSO), 2011 Table 3: The registered vehicles in Sana'a in 2001

It is worth noting that accurate figures on the number of vehicles using Yemeni roads is unknown or not available. During 1996-2013, the total vehicles registered officially at police traffic department were 1,072,244 vehicles most of them were private cars, followed by public transport vehicles and taxi cars and heavy vehicles. There is a large number of smuggled and officially un-registered vehicles used on Yemen's roads as well. The big increase of vehicles registration in 2013 compared to 2012 (about growth 45.7%) could be an indicator of smuggled vehicles. This increase is a result of the amendments of the Law of Tariff in 2012. In addition, there is a large number of vehicles belonging to military and police departments, besides the diplomatic vehicles.

The rapid increase in the use of the private vehicles has resulted in several problems, mainly: increased traffic congestion, accidents, inadequate parking space and air pollution. This problem is magnified considering that most of exported vehicles are used and second hand vehicles. With almost 3,000 persons killed every year in traffic accidents, road safety is exceptionally poor in Yemen.

Cities in Yemen implemented a number of measures to reduce traffic congestion. For instance, authorities of Taiz Governorate made plans to ease traffic congestion in the main streets through limiting the number of motorcyclists and street vendors as well as move popular

markets "suqs" to the outskirts of the city. The number of motorcycles in Taiz is estimated at about 5400, all of which are used as public transport.

Other cities, such as Sana'a, Aden, Mukalla and Hodeidah, have reflected the issue of traffic congestion within their City Development Strategies (CDS). Solutions were presented in the CDS Capital Investment Plans. With support from the World Bank, a Comprehensive Traffic Management Study (CTMS) was conducted in 2006 in Sana'a city.

This Study represented a key foundation for the proposal of a number of capital investment projects addressing the city problems in the transportation and traffic sector. Expanding over a period of seven years (2010-2017), the five strategic transportation projects listed in Sana'a capital investment projects include the following:

- Implementation of five multi-grade road intersections to improve traffic circulation, which will be added to already built or under construction 9 multi-grade intersections funded by the Arab Fund (2012-2016).
- Creating an integrated traffic control system that would include connected traffic signal installations, a CCTV traffic surveillance system, a communication system, and a Traffic Management Center (TMC) for all of Sana'a (2010-2012).
- Introducing a modern, cost-effective, and high volume rapid public bus services with a dedicated right-of-way along Sana'a's north-south central spine for a distance of 30 km (2012-2016).
- Constructing a 1.5 km tunnel under Barash Mountain and 11.6 km of a four lane ring road to link to existing roads (Sawan to the North and Kholan to the South). Currently there is no road by-pass around the city proper to the east due to the Nuqum mountain system. Thus this ring road link is crucial for other arcs of Sana'a's ring roads to function properly (2013-2016).

Similar investment projects have been proposed for the other port cities of Aden, Mukalla and Al-Hodeidah.

4. Air Pollution

Air pollution has been acknowledged by the GoY as a key environmental problem affecting the health of the people in Yemen. This problem is primarily affecting cities and urban agglomerations as well as industrial areas.

A 2010 UNEP report on Yemen Environment detailed the major sources of air pollution. Those primarily relate to: manufacturing activities, in addition to power generating plants and vehicles.

The main source of air pollution in urban settings and particularly in cities such as Sana'a, is emissions from cars and other vehicles. Encompassing more than 300,000 vehicles, Sana'a air pollution is heavily affected by gaseous emissions caused by old vehicles using leaded gasoline or local diesel, which contains a high level of impurities.

Yemen remains one of the few countries worldwide that continues to use leaded gasoline in cars and other vehicles. There are very few lead-free petrol stations. The pollutant concentrations are estimated to be much higher than the set standards for air quality. The air quality in cities may deteriorate as a result of the rapid growth of the cities and the growth of the traffic intensity in particular may trigger this situation to the worse.

In 2008, the Ministry of Environment and Water started working on a national strategy to reduce air pollution. The authorities have since then implemented few measures to improve the air quality, such as forbidding vehicles that were manufactured before 2000 to enter the country and reducing the taxes on new cars.

Yemen coastal areas are also affected by air pollution due to the crude oil production and petroleum refining. Notwithstanding its value to the national economy, the exploration,

production and transportation of oil have had adverse impacts on the air quality and the increasing pollution of Yemen coast and marine environment.

Other industry-related air pollution factors emanate from: small-scale production of cotton textiles, leather goods; food processing; handicrafts; aluminum products; cement; commercial ship repair; natural gas production among others. Those medium and small size industrial activities use old technologies and do not have any air pollution control precautions.

Yemeni officials are working to reduce lead emissions in the air. The Marib Refinery is an example of a Yemeni firm working to produce unleaded gasoline, but some refineries still use leaded gasoline because they are old. Aden Refinery also hopes to improve and replace lead with less damaging materials. However, the existing older cars running on leaded fuel will not be replaced entirely. Some Yemeni oil refineries like Safer Exploration and Production Operations Company have begun producing lead-free gasoline.

The expansion of urban centers is posing pressures on environmental resources and services to meet the growing demand of the new inhabitants. The main problems relate to water supply, sanitation, and air pollution, liquid and solid waste management. The National Environment Summary prepared by UNEP and the GoY mentions that less than 40% of the nation's solid waste is officially collected and disposed of. This percentage varies from over 90% in the two main cities of Sana'a and Aden, to less than 20% in nine of the twenty-two governorates of the country. The report also shows that there are 21 controlled or semi-controlled disposal sites and 27 open dumps. The actual number of open dumps is much higher since many towns and cities each have more than one area where wastes are dumped. Recycling often seems to be a forgotten issue, although it is estimated that, in 2006 in four large cities, over 90000 tons of recyclables were recovered and exports of recycled plastic amounted to more than US \$ 10 million

5. Challenges experienced and lessons learnt

- Several capacity constraints have been identified, and weak governance and institutional structures are among the key ones that impede Yemen from achieving its commitment under the UNFCCC convention. Strengthening the institutional and technical capacities in addition to promoting and enforcing of renewable energy strategy and energy efficiency are among the major capacity development needs to ensure enhanced implementation of climate change adaptation, and mitigation strategies in Yemen.
- The EPA is incapacitated in terms of technical and technological capabilities. Out of a total of 140 employees working in the EPA, only 20% are first degree university graduates. The EPA lacks an environmental laboratory to facilitate qualitative and quantitative analysis of environmental changes. As such, any policy, plan or strategy addressing climate change and disaster reduction should be accompanied by a strong institutional development and capacity building components. Concerned governmental institutions should be equipped with the required information and technology tools to adequately monitor climate change and prevent disasters.
- Any climate strategy must also explicitly consider the needs of the poor and socially excluded, which are always the most vulnerable and disproportionately impacted by weather extremes.
- Despite Yemen's expressed commitment to exploit its renewable energy sources and promote energy efficiency by enacting the national strategy on renewable energy in 2009, efforts to promote and enforce the implementation of the strategy is needed.

6. Future challenges and issues to be addressed by a New Urban Agenda

- Creating a climate resilient society is a challenge and more so in a fragile state like Yemen, where options are limited. The health and wellbeing of the population depends among others preventing weather-related hazards from becoming major disasters. Climate informed decisions that would effectively address these hazards are currently not possible.

Significant investment is needed to improve climate information and services, to manage climate related risks and to adapt to the environmental changes that are occurring.

- The latest land use and soil survey was in 1973 and was only for the northern part of Yemen. Apart from soil and forestry issues, there is lack of disaggregated activity data and emission factors needed for the GHG inventory estimation methodology for both IPCC guidelines. This includes, among others, lack of activity data on industrial products, local aviation and marine data and energy use by sub-sectors.

IV. Urban Governance and Legislation

1. Improving urban legislation

Since its unification in 1990, Yemen has invested tremendous efforts in the field of legislation. Under the Constitution of the Republic of Yemen (1994), all legislation is based on principles of Islamic law. Private property is respected and protected. The primary civil law governing land is the Law of Land and Real Estate No. 21 of 1995. The Law of Land and Real Estate provides for the classification of land (public, private, communal) and terms of use. In practice, the Law of Land and Real Estate generally governs urban land rights and the population looks to customary law and Islamic law for principles relating to rural land. The Waqf Law No. 23 of 1992, governing land donated to religious organizations, dictates the terms for leasing waqf land (as mentioned earlier).

Other important urban legislations, deal with water and energy:

- Urban planning Law No. 21 of 1995.
- Water Law No. 33 (ratified in 2002) promotes the sustainable use of water, protects water resources from overexploitation, and balances the water needs of the various communities and sectors. However, the formal Water Law is apparently unenforced.
- Energy Act No. 1 of 2009. The provisions of this Act apply to the activities of generation, transport, wholesale, distribution and consumption of electric power, as well as its import and export to and from the Republic of Yemen. The Act aims to: ensure electrical energy security; diversify environmental friendly sources of energy production, including renewable energy and reliable sources of sustainable energy; ensure the functional separation of the services of electric power; set and apply tariffs in a fair and transparent manner; ensure safety, continuity and quality of electricity service; regulate the relationship between consumers and licensees; encourage domestic and foreign investment in the electricity activities.

Although a new building code was prepared in 2002, the executive by-law that is needed to put in action this code was not formulated. This implies that the 2002 code cannot be enforced. As such, major cities like Sana'a do not apply any building regulations apart from the maximum permissible heights along the airport flight path.

During the past decade, two important legislative and institutional reforms have been carried out by the GoY, detailed as follows:

- Presidential Decree No.35 of 2006 establishing the General Authority for Lands, Survey and Urban Planning (GALSUP) was issued in an attempt to better coordinate public authorities with responsibility for land. The Government consolidated authority over a number of urban functions formerly exercised by different entities:
- Land survey, mapping and registration, formerly implemented by the Survey Authority and Land Registry, Presidency of the Council of Minister
 - Management of State land and real estate, formerly under the State Land and Real Estate Authority, Presidency of the Council of Ministers; and

- Urban planning, formerly under the Urban Planning Sector, Ministry of Public Work and Highways (as mentioned earlier).
- The Local Authorities Law (No. 4 of 2000), which represents a centerpiece of the ongoing decentralization effort and the culmination of a political process which started after Yemen's unification in 1990. This law allowed for the initiation of a comprehensive reform of the Yemeni Governance system through the establishment of three levels of Government: central, governorate and district.
- Networks, making it more difficult for people accessing their primary needs.

2. Decentralization and strengthening of local authorities

The Local Authorities Law provides a clear and comprehensive legislative framework for decentralization based on the following principles:

- Popular participation in decision making and local management in socio-economic and culture development through elected councils;
- Financial decentralization; and
- Decentralization of administrative and services delivery functions.

The law defined the responsibilities of government bodies accountable to the Ministry of Local Authorities (MOLA). In brief, those bodies include actors at two levels of government, or what the law refers to generically as the 'administrative units' of 'governorates' and 'districts.' The law describes the government actors within those units as being:

- An indirectly elected head of the administrative unit, (called the 'Governor' at the governorate level and the 'General Director' at the district level) and;
- A directly elected council for the administrative unit.

With the passage of the Local Authorities Law in early 2000, Yemen made a major step towards political, fiscal, and administrative decentralization to the local level. In fact, the law transferred decision-making from the central level to elected local councils at the governorate and municipal levels, which were given the competencies of formulating development strategies and programs, budgeting capital investment plans, supervising the implementation of the different strategies and programs, and monitoring the activities of the executive local authorities. The different line ministries' local branches (e.g. public works, education, health, etc) were transformed into local executive authorities operating under local councils' guidance and whose mandate includes the implementation of the strategies and programs proposed under the annual developmental plan and budget and the delivery and management of the different services.

Subject to criticisms from various parties, the need arose to modify it. As a result, and based on series of studies on decentralization between the period extending from 2003 until 2007, the president called for a change from a system of local authorities to one of local government. A Presidential decree 264/2003 was issued to establish a ministerial committee to promote decentralization. The tasks and functions of the committee were detailed in cabinet resolution 112/2004. Additionally, the Cabinet adopted two resolutions:

- Resolution 401/2008 that endorsed a draft strategy submitted to it and the nation's governors by the Minister of Local Authorities (MoLA), and
- Resolution 411, which obligated MOLA to design a national program to implement the National Strategy for Local Governance.

This strategy specifically complains that "The Local Authority Law included a sizable number of the essential principles required for the establishment of a decentralized financial and administrative system. Such theoretical principles failed, however, to enable the local authority system to bear the burden of running local affairs on the ground in a way that ensures the satisfaction of local needs, fulfills citizen's aspirations and conforms to international quality and efficiency standards".

The outbreak of 2011 events in Yemen have halted the entire reform process. It is worth mentioning that the one of the main demands of the protestors in 2011 was to address the extreme centralization of power. Protestors blamed the ex-regime for the intended mal application of the Local Authority Law. In the National Dialogue Conference (NDC) (January 2014) discussions focused primarily on the future division of the country following a federal system. Yemen structures, the presidential versus parliamentary systems, centralized versus decentralized systems, and the structure of local government institutions are the key aspects that are thoroughly address by the NDC state-building working group.

3. Improving participation and human rights in urban development

In recent years, human rights issues gained significant importance in Yemen. This was translated in the government signing of a number of international human rights treaties as well as the establishment of a Ministry of the State of Human Rights and a CSO Human Rights Network. Additionally, the draft constitution that was developed by the NDC hundreds of human rights and other recommendations for reforming existing legal texts. Women's, girls' rights and child rights were thoroughly addressed in the proposed legal texts. Recently, a draft Child Rights Law was proposed to set the minimum age of girls' marriage at 18 and provides criminal penalties of between two months and one year in prison and a fine of up to 400,000 Yemeni Riyal (US\$1,860) for any authorized person who draws up a marriage contract knowing that at least one party is under 18.

Yemen has a vibrant and dynamic civil society. From a legislative perspective, the Yemeni Law on Associations and Foundations (Law 1 of 2001) is the most enabling law governing civil society organizations (CSOs) in the Arabian Peninsula. Compared with CSOs in the Arab Gulf countries, Yemeni CSOs are generally easy to establish under the law and able to operate with minimal government interference. The size of the CSO sector in Yemen is considerable and includes more than 10,000 registered associations and foundations. It has been reported that the number of registered CSOs increased in the aftermath of 2011 events. The rapid growth in civil society activity is attributed to the social and political opening associated with the political transition and with growing demand for greater government accountability and improved public service delivery in sectors and geographic areas where government institutions have difficulty providing services.

Operationally, with their presence on the ground CSOs are able to reach and engage local communities in the various development programmes, especially the deprived poor, vulnerable people, and youth. The size, type and scope of the work of those CSOs vary. It includes the big and small, the philanthropic and the development oriented organizations, as well as those that work at the national level, and the others that focus their work on selected communities. Acknowledging their prominent role, the National Dialogue Conference made sure to engage CSOs in the revision of the first draft of the new constitution in 2015.

In many instances, the GoY, supported by relevant multilateral agencies, has partnered with CSOs and Community Based Organization to enhance community participation in a number national urban development programmes. The Social Fund for Development (SFD) has been operational in Yemen since 1997 and was designed to combat national poverty and reinforce the limited existing social safety net through encouraging innovative and participatory approaches to delivering demand-driven social services. Since its inception, the SFD has been widely viewed as successful in implementing programmes in rural and urban communities throughout the country and has steadily expanded and scaled-up its activities despite Yemen's volatile socio-economic context and political unrest.

Recent evaluation reports for the SFD showed that the demand-driven approached adopted by the Programme was one of its main success factors. This participatory approach did not only facilitate community ownership to the projects that they have selected but also allowed the smooth implementation process of those projects. The adopted approach introduced democratic processes as the communities had to decide what type of intervention is a priority

and who represents them during and after project implementation using elections and meetings. This process has been encouraging women to participate in public events and to become members of community committees. The relationship established with communities and local people during such processes was effective in facilitating SFD's access to difficult regions, as indicated in the evaluation report.

Another relevant example that represents a success story in community participation in urban development is the GIZ Medina Project: Economic Development of Historic Cities in Yemen. The Project, which was initiated in 2007 under a bilateral agreement between the Yemeni and German governments, involves the participatory urban renewal of historic cities in Yemen, using heritage preservation as a starting point to address the needs of a living community and develop wider urban renewal processes, improvements in housing conditions and local economic development. Historic residential buildings are renovated and restored using locally-available materials and reviving traditional skills and construction techniques. Residents are involved throughout the process and engage with the local authorities in defining recommendations and strategies for the rehabilitation of their cities. An Urban Rehabilitation Forum was established to enable joint decision-making and dialogue among various stakeholders, including women and young people.

4. Enhancing urban safety and security

Yemen is considered a fertile ground for the eruption of inter-community conflicts in the urban arena. Safety and security threats in Yemen urban areas are due to a number of factors, mainly:

Informal Settlements and Tenure Insecurity: Security of tenure is a major concern for 66% of urban population²⁰ living in informal settlements. Eviction possibility is a major safety and security threat for dwellers of informal settlements. The only holistic approach adopted by GoY has been to demolish slum pockets and to relocate the affected poor populations into expensive resettlement housing estates. The lack of effective land registration and unclear records of ownership does pose a risk to urban upgrading in informal settlements in the event of future land disputes.

Land Disputes: Surveys in Yemen consistently show that land issues make up 75 to 80% of the root causes of conflict. Poverty, combined with increasing land stress, i.e. too many people and too little land, provide the context for these disputes, which are then exacerbated by the internal armed struggles occurring throughout much of the country. Urban land conflicts have occurred primarily as a result of rapid urbanization, unclear land titling (lack of formal land registration) and as a result of harsh political realities, i.e. 'the spoils of war'. In this sense, and particularly in Aden, Lahaj, Abyan and Hadramout in the aftermath of the 1994 civil war, land that had previously been held by the state was taken by the military victors or their commercial agents. Much of this land has subsequently been developed and used for productive commercial ventures.

The lack of adequate dispute settlement arrangements clearly contributes to insecurity of tenure in Yemen, but other factors render the situation more difficult to resolve, mainly: the absence of a cadaster and exact land surveys as well as lack of recording of rights in land and consequent difficulties in proof of rights. The recording of deeds with the notary is the most widespread form of right registration in Yemen. There is also a land register managed by the Land Authority under the Land Registration Act (No. 39 of 1991). This register exists only in Sana'a, with parcels in urban and peri-urban area around the country registered there.

Water scarcity: Yemen is facing a severe water crisis. Water shortage is hitting the entire country affecting the lives and livelihoods of a significant proportion of the population that is mostly rural and depending on agriculture as a main source for the household income. Water scarcity is a threat to the country's security and safety as increased numbers of confrontations

²⁰ According to the World Bank Integrated Urban Development Project.

are occurring between people over access to water sources. The government estimates that 4,000 people²¹ die yearly in fights over water resources. The conflict in the country is exacerbating water scarcity by reducing access to safe drinking water.

Refugees and displaced people: 2.3 million people have been displaced since the beginning of the conflicts in Yemen in 2012 and its escalation in 2014-2015. The entire country is in the middle of severe crisis and political unrest. Of the 2.3 million IDPs, about half of are concentrated in Aden, Taiz, Hajjah and Al Dhale'e governorates, with additional significant populations in Abyan, Al Bayda, Ibb, Sa'ada and Amran. Considering that there are no camps set up for displaced population in Yemen, IDPs are living either in make-shifts shelters, in public building, renting or sharing with families – stretching host communities' capacities to the limit and exposing vulnerable groups to protection risks. Safety nets are eroding as families adopt negative coping strategies in order to survive. The longer the crisis lasts the higher are the threats of confrontations between host communities and the IDPs. Tensions are likely to occur as a result of low availability of resources and food, the differences in customs and traditions and the occupation of schools by IDPs.

Other urban safety issues that have been covered in previous sections relate to the road and transportation sector.

In an attempt to address those urban safety and security challenges, the GoY has implemented a number of legislative and institutional reforms, mainly (some of those initiatives have been covered in previous sections):

- The setup of the General Authority for Lands, Survey and Urban Planning (GALSUP), issuing a Law for Land and Real Estate and drafting land registration law;
- The issuance of Water Act Nr. 33 of 2002 and amended in 2006, the development of the National Water Sector Strategy and Investment Program (NWSSIP), drafting the National Water Strategy in 2004 and updating it in 2008 and the establishment of a specialized Ministry of Water and Environment. The National Strategy for Environmental Sustainability in Water Sector focused on increasing water resources so as to meet the growing needs, equitable distribution, and efficient use of the resources and protect them from pollution and waste.
- To address displacement and promote political transition, the GoY held an inclusive national dialogue (March 2013-January 2014) consultation, which set out a detailed roadmap for democratic reform and the establishment of a new federal state. In June 2013, it adopted a national policy on internal displacement, which addresses all causes and provides a comprehensive framework for response. The success of these initiatives will depend on implementation, improvements on the political and security fronts and continued donor support.

5. Improving social inclusion and equity

Having a rentier economy that is depending significantly on producing and exporting oil and natural gas, Yemen past decades' economic growth was not accompanied by creating job opportunities. The main productive sectors such as agriculture and industry witnessed a decline in their contribution to the GDP.

Yemen has always been ranked as one of the poorest countries in the Arab world. Poverty indicators show a rise prior to the latest crisis, from 42% of the population in 2009 to 54.5% in 2012²². The impact of 2011 crisis on poverty indicators showed that urban households were more affected than rural households. Urban poverty rose sharply by 13.3% points from 29.9% in 2009 to 42.4% in 2011, which may reflect the fact that much of the uprisings took place in

²¹ Source: <http://www.scidev.net/global/water/news/water-death-yemen-conflict.html>

²² Source: <http://www.worldbank.org/en/country/yemen/overview>

urban areas while many rural areas may have been affected only indirectly²³.

One of the main causes of poverty as identified in a recent ESCWA report²⁴ is the economic and social exclusion, which prevents access to the assets (land and money), and, thus, inaccessible to the basic social and humanitarian needs. With the poor socio-economic indicators, Yemen is by far considered a country that is promoting social inclusion and equity. One can argue that the root causes of the recent turmoil and armed conflicts increased poverty and high rates of unemployment that are particularly affecting the youth segments of the country.

Prior to the crisis the GoY with the support of a number of international partners have initiated three main protection programmes, summarized as follows:

- The Social Welfare Fund (SWF); Established in 1996, SWF is the largest social cash-assistance program in Yemen: YR 60 billion budget in 2011 (about 0.65% of GDP). SWF currently has nearly 1.5 million beneficiary cases; 50% can engage in economic activities. The cash transfer ranges from YR 2,000 to YR 4,000 per HH per month, and is transferred on a quarterly basis. SWF offers other benefits to its recipients: fee waivers for health and education services as well as emerging programs of conditional cash transfer for health and education. SWF has multiple programs for beneficiaries' development BDP's including microfinance and training.
- The Social Fund for Development (SFD): The SFD was established in 1997 and contributes to reducing poverty by increasing the access of poor communities to basic social and economic services, building the capacities of local partners, and empowering communities and local authorities to implement developmental works. The SFD seeks to achieve these goals through four multi-sector programs:
 - Community and Local Development;
 - Small and Micro Enterprises Development;
 - Capacity Building;
 - Productive Safety Net Labor-Intensive Works Program (LIWP).From 1997 to December 2011, SFD implemented 12,047 projects in all sectors worth US\$1.44 billion. In 2012 SFD elaborated its fourth phase (2011–15) focusing on crisis/post-crisis response.
- The Public Works Project (PWP): It was established in 1996, under the auspices of the Ministry of Planning and International Cooperation (MOPIC) and implements basic infrastructure projects. Its aim is to mitigate the adverse effects of Yemen's structural reforms that started in 1995. The PWP aims to create job opportunities for skilled and unskilled laborers while providing infrastructure service projects for the poor and deprived communities in remote areas. PWP also promotes the development of the local contracting and consulting industry. By the end of 2010 PWP had implemented 3631 projects, with an estimated cost of US\$310 million and creating temporary job opportunities of approximately 648,956 person/months.

Additionally, to address social inclusion and equity, the GoY elaborated a number of national policies, plans and strategies (some of those were already elaborated in previous sections), notably:

- Yemen's Strategic Vision 2025 is aimed at "placing Yemen by 2025, among the countries of inclusion moderate human development with economic diversification and social, scientific, cultural and political development".
- Poverty Reduction Strategy 2003-2005 is the cornerstone of clear and specific interventions to combat poverty. It consists of five axes; starting with achieving economic growth, increasing employment opportunities, developing infrastructure, providing a better

²³ Joint Social and Economic Assessment for the Republic of Yemen, World Bank, UN, EU and Islamic Development Fund, 2012.

²⁴ National Assessment of Sustainable Development, Background Document, Arab Sustainable Development Report, ESCWA, 2015.

level of basic social services, establishing an effective social safety net for the poor and, finally, drafting a mechanism for encouraging participation and cooperation.

- The third Economic and Social Development Plans for Poverty Reduction (2006-2010) started to link development plans to poverty reduction strategies. The fifth-year plans adopted a set of policies and programs to achieve the following: 1) Expanding the social safety net and developing its targeting mechanisms, 2) Empowering economically the poor by promoting small projects and micro finance programs and 3) Giving priorities to labor-intensive investments in all sectors, particularly agriculture with a focus on rural areas.
- Other National Strategies Focus on Combating Poverty include Food Security 2010, Agricultural Sector 2012, Fishery Sector 2012, Water 2013, and Environmental Sustainability 2007.
- The National Plan on Youth Employment (2014-2015), which was endorsed by the Cabinet in September 2013.

Women in Yemen remain among the most marginalized groups in Yemeni society. Despite the rights given to women as dictated in Islam, the Yemeni legal system and international conventions, many women in Yemen have yet to realize their full humanity, rights and citizenship. Although significant efforts have been deployed by the GoY to address this problem, inequality and discrimination against women remain the main constraints enhancing their social exclusion.

6. Challenges experienced and lessons learnt

- The SWF Law was amended in 2008 to introduce measures to improve the program's targeting and effectiveness. These included shifting to poverty-based targeting; delivering beneficiary development interventions to help poor families integrate into the social and economic development process; and introduction of graduation and/or recertification policies and processes. To operationalize the law, SWF adopted a Proxy Means Test (PMT) targeting approach and conducted a nationwide household survey to recertify existing beneficiaries and identify eligible new ones.
- As a result, the SWF has established the most comprehensive national record of the poor and vulnerable households in Yemen. The database of about 1.65 million households is being used by other Government agencies and development partners to target and coordinate different services and benefits across a range of social programs.
- A key barrier that discouraged poor people from applying for SWF earnings was the need for certification by community leaders, which may also be used as a political tool. In this regard, in order to making SWF protection offers a more accessible civil registry system should be developed, which would also identify poor households and IDPs. This would provide multiple benefits including improved targeting of pro-poor programs.
- The role of Civil Society Organizations (CSOs) in providing social protection services should be enhanced. They can also play a role in enhancing positive traditional norms, social harmonization and peace building.
- Due to flexible and innovative implementation approaches, the SFD was able to change the development-oriented programmes to respond to the emerging humanitarian needs and priorities.
- Decentralization (with municipal elections in 2001 and 2006, amendment of the "local authority law," and indirect election of governors in 2008) is progressing slowly and is hampered by a lack of financial and human resources.

7. Future challenges and issues to be addressed by a New Urban Agenda

- To move forward with the legal and institutional reforms that resulted from the NDC. Achieving this would require the mobilization of resources as well as security and political stability.
- Youth social exclusion has to be addressed in a comprehensive manner. As mentioned in a previous section, high levels of youth unemployment as well as their low levels of

engagement contribute to their exclusion. Furthermore, youth disengagement in society leaves them vulnerable to radicalization and mobilization in militia type activities. All these factors deplete the social cohesion, which is a vital element to a long-term and sustainable vision of national development.

- In 2012, the Government of Yemen, in line with its current commitment to UNHCR, should develop and operationalize a national policy on internal displacement. In 2012, the GoY, in line with its current commitment to UNHCR should develop and operationalize a national policy on internal displacement. The policy needs to set out the rights of IDPs in accordance with international standards and the responsibilities of the authorities towards IDPs. It should articulate key strategic priorities of the Government towards addressing the current challenges of internal displacement in Yemen. A strong focus of the policy should be on creating conditions enabling IDPs to secure a durable solution to displacement.

V. Urban Economy

1. Improving municipal/ local finance

During the past two decades, the GoY has achieved significant progress when it comes to decentralization measures. Those were clearly defined in the Yemen's Strategic Vision 2025 which states "exercising authorities granted by the Law of Local Authorities, in planning and executing projects and programs at the local level requires the application of administrative and financial decentralization, which came to activate the role of the citizens and to expand their participation in development. This represents a mechanism for the stability of the population in their regions and for clarifying the relationship of the local authorities with the Government at the central level".

Strongly encouraged by the central state in terms of policy-making, fiscal decentralization as included in the Local Authority Law of 2000 enables governorates and districts to locally generate revenue from fees, tariffs, taxes and receive central financial support for capital investments and recurrent operating expenses. This Law seeks to fiscally decentralize the Yemeni government by increasing local budgetary autonomy. Before 1999, fiscal allocations were tightly controlled by the central government, creating delays in local development projects. Most local revenues come from the central financial support, district local revenues and joint revenues at the governorate level. The new law provides that local authorities will keep revenues collected at the local level. Portions of monies collected by the central government on behalf of local authorities are re-distributed to municipalities based on population density.

The 2000 Law has specified four main sources of revenues to local authorities:

- *District Local Revenues* levied locally in the district in its own favor by existing governmental branches. All revenues are retained at the source (the district). In addition to 50% of the Zakat, those comprise 19 types of local fees, the tax of free works as well as 6 other sources. Some of the main sources include: 50% from the Zakat revenues, fees on sport events, fees on hotels and tourism, fees for obtaining a building permit, fees for registration of commercial activity, etc. 25.
- *Joint Revenues at the Governorate level* for its own favor. In addition to 50% of the Zakat revenues, they comprise 19 types of fees, 3 types of taxes and 5 other sources. Some of the taxes and fees revenues include: taxes on revenue from rental of property, Qat consumption tax, and fees of vehicle registration, driving and transfer its property. These revenues are re-distributed in the same governorate as follows: 25% of the collected

²⁵ The resolution of the Prime Minister No. 283 of 2001, setting up the values of the local fees bases as stipulated in the article 123 of Law No. 4 of 2000, on districts level and governorates level.

revenues are retained by the governorate, 25% is retained by the Governorate and the remaining revenues (50%) distributed equally between the other districts in the governorate.

- *Joint Public Resources.* Those are collected by the central government on behalf of local authorities and local development funds.
- *Central Financial Support.* Those comprise ad hoc annual allocation decided by the council of ministers.

The revenues from Joint Public Resources and Central Financial Support are re-distributed to local authorities based on a number of criteria, mainly: population density, poverty levels, efficiency of local authorities' performance, availability of resources etc²⁶.

The expenditures of the local authorities in Yemen include three categories:

- The administration costs of local councils (mainly allowances or council secretary general and chairperson of permanent committees and council meetings). These costs are covered by a central appropriation (recurrent fiscal transfers).
- Administration and operating costs of de-concentrated executive organs. Those are also funded by a central appropriation (recurrent transfers). The governor or the district general director is the authorizing officer for these expenditures.
- Local investment expenditures that are appropriated by the local council in the framework of the annual planning-budgeting process. This is the only part of the local budget that is formulated under the full control of the local council.

As a matter of fact, it is worth mentioning that the budgets of local authorities in Yemen are not distinct from the national State budget. They are rather a subset of the State budget. District budgets are consolidated into governorates ones, and the latter into the national budget. One implication is the impossibility of local authorities to make any amendment to their budget, if necessary, during the fiscal year. Also, since the format of local authorities' budget should conform to that of the State, the account classification system used (line item) is not appropriate for local expenditures.

Based on the above description, one can draw a number of conclusions:

- Yemen lacks a true 'fiscal decentralization' at the local level. Local Councils have no authority to set the amount of taxes, and at the district level at least, must share whatever is collected with the governorate in a proportional system that, for instance, requires them to send half of all they collect in zakat to the next higher level.
- Although local authorities are responsible for approving a budget, they have no discretion to move money between its line items, once approved, if circumstances during the year should require a change. And thirdly, and most importantly from the perspective of governmental power, they must rely on third parties to collect whatever taxes they receive.
- Yemeni municipal finance is characterized by the dependence of the local authorities on central government to allow them cover both: 1) all recurrent costs for local services delivery and infrastructure maintenance and 2) a large share of their investments and development programs and projects costs, through a mix of earmarked and general purpose capital transfers.

2. Strengthening and improving access to housing finance

The last two censuses in 1994 and 2004 reveal some interesting data concerning the housing sector in Yemen.

- The proportion of renting households considerably differs from one town to another. In Sana'a and Aden, 47.7% and 16.9% of households are renting, respectively.

²⁶ Article No.243 of the Bylaw of Local Authority and article No. 41/A of the Financial Bylaw of Local Authority, Presidential Decree No. 24/2001. The Cabinet issue annually the distribution bases of these revenues.

- The percentage of 'huts and shacks' is relatively low (approximately 2.3% in urban areas), but a substantial proportion of urban households lack urban infrastructure. For instance, in 2004, 26% of urban 'buildings' were not connected to any water supply network. This rate increased to 72% in rural areas.
- Most of the housing in urban Yemen is characterized by detached, individual houses. However, apartment housing is on the rise. From 1994 to 2004, the number of entrances found in multi-unit or collective housing blocks increased from 16.5-26.2% of the urban total. The surplus of housing units over households is small.
- This surplus is especially noticeable in urban areas. For instance, 6% more units than households are found in the cities of Sana'a, Taiz, Aden and Al-Hodeidah. This surplus is only 2.8% for the entire nation.
- Housing overcrowding in urban areas is alarming. Roughly 6,000 households in Sana'a and 9,500 households in Aden share housing units, and between 50-75% of households in these cities live with more than two people in one room. A poverty study in Taiz reported that 68% of households in Taiz live in similarly crowded conditions.

These figures show that the housing sector in Yemen is not adequately performing. The central problem is not about supply and demand but mostly about affordability. Price of housing is extremely high far above the levels that would be expected when looking at the country's levels of income, it is indeed one of the highest in the MENA region. The affordability problem is largely the result of housing and land supply policies. Additionally, the inadequate housing supply compared to the increasing demand and constrained flexibility with which the housing stock is used, contribute to the high housing prices and low levels of affordability.

The housing finance is undeveloped in Yemen. The people build their houses by saving money or by getting family and friends loans. The commercial banks in Yemen give the people short loans but with difficult mortgages and the high of interest rate. Therefore, the low-income group is unable to get these loans and cannot afford housing with high price²⁷

Housing finance in Yemen is quite limited and characterized by relatively short repayment periods and reliance on income rather than property guarantees. One of the most significant constraints of the development of housing finance in Yemen is the prohibition against using personal property as collateral for loans and have led banks to limit housing loans to only well-known and trusted wealthy clients. The Housing Credit Bank (HCB) was established in 1977 to allocate finance for the construction of houses. The HCB currently has paid-in capital of YR 200 million (CBY currently requires paid-in capital of YR 1 billion), and is 93% owned by the Government and the other 3% are distributed among private shareholders. HCB was considered the main vehicle for housing lending in Yemen. HCB has reduced loan losses by requiring the automatic deduction of repayments from borrowers, something that has also limited loans largely to civil servants. By a presidential decision, HCB is to be merged with the CAC Bank. So far, no procedures for implementation of the decision have been finalized²⁸.

Driven by urbanization, demographic pressure and high inflation, the demand for housing is dramatically high. However, supply side policies and institutional frameworks in general and those addressing the housing needs of deprived and poor families in specific have not yet been adequately developed. The country lacks an integrated national housing policy and consequently, housing finance schemes for deprived and low income groups are not properly addressed. One of the main consequences of the affordability issue is the mushrooming of squatter settlements and un-serviced peripheral neighborhoods. This measure of exclusion from formal housing services appears to be a growing concern in Yemen, as there are strong signals that informal settlement ratios are increasing, particularly in the Capital Sana'a.

²⁷ Developing affordable housing design for low income in Sana'a, Yemen, Wa'el Alaghbari and others.

²⁸ Comprehensive Development Review, Financial Sector Building Block, Republic of Yemen. Financial Development in Yemen 2008.

Except for incidental resettlement, disaster relief projects and the recently started public housing program, all the instances of housing production in Yemen are undertaken by the private sector or private individuals. In fact, it is estimated that around 95% of the total housing construction is carried out by the private sector.

In 1998, supported by a number of multilateral agencies, the GoY represented by the Ministry of Public Works and Highways launched a national housing programme to provide housing for low income families. The design of the programme came as a result of intensive data collection and analysis that were carried out by the National Urban Observatory-NUO (within the Ministry of Public Works and Highways) supported by the four Local Urban Observatories in Sana'a, Aden, Mukalla and Taiz.

The programme aimed at addressing the need for adequate housing for:

- A rapidly growing population;
- Inhabitants of overcrowded housing;
- Inhabitants in inadequate shelter;
- Inhabitants of slums and squatters.

A five-pillar strategy was developed and included:

- Addressing the housing needs of deprived population;
- Addressing the housing needs of low income families;
- Ensuring adequate lands;
- Housing investment; and
- Supporting housing associations in housing provision.

The President Al Saleh Housing Project is the biggest and the most important housing projects with a total of 5018 housing units in 8 governorates. The total cost of this project is around YER 24 billion and covered by a number of ministries: Ministry of Public Works and Highways, Ministry of Awkaf and the Urban Development Fund within the Ministry of Public Works and Highways. As part of this national programme, upgrading and re-settlement of slums and squatters have also been addressed, particularly in Sana'a.

Low income housing were implemented through Urban Development Projects, including the Urban Development Project III in Taiz and a similar one in Swad Sa'wan in Sana'a city (3 phases). The other projects were implemented including the July 7 Housing Project in Al Hodeidah (4500 housing plot), the Hezar Housing Project in Thamud Hadramout (50 housing units) and Mashqaran Housing Project in Al Mahara (50 housing units).

3. Supporting local economic development

With the devolution of responsibilities to municipalities through the Local Authorities Law, local governments have been considered strategic partners for promoting local economic development. Not only have they received financial resources to carry out a number of initiatives but also have undergone a number of training and capacity building activities to enable them to plan and implement local economic development programmes. Prevailing economic development disparities between the South and the North and the centralization of economic decisions have recently led to a proposal for creating a federal state and to adopt a decentralized economy that includes six economic regions or Iklim (as stated in the draft Yemen Economic Vision 2030 to the national dialogue).

Past donor-support initiatives to promoting local economic development that have primarily focused on cities were initiated by the World Bank through the City Development Strategies and Port Cities Development Programme.

As mentioned previously (section 9), the CDS programmes have been implemented in Yemen's four largest urban areas—Sana'a, Aden, Al-Hodeidah, and Mukalla. The exercise in the four cities came up with investment plans with priority interventions for local economic development, summarized below:

- Sana'a: 18 capital investment projects have been identified that would have the greatest positive impact on the city's development and have been assigned high priorities for implementation. These were organized into (1) transportation-related projects, (2) key infrastructure projects, (3) urban and environmental projects, and (4) tourism promotion projects.
- Aden: ten priority investment focusing on (1) core economic assets and clusters and (2) strategic infrastructure investments.
- Al-Hodeidah: ten priority investments focusing on (1) core economic assets and clusters, (2) strategic infrastructure investments, and (3) urban assets and social and environmental improvements.
- Mukalla: ten priority investments focusing on (1) core economic assets and clusters and (2) strategic infrastructure investments.

The strategies introduced a participatory approach to urban planning. These strategies actively engaged civil society and private sector stakeholders for the first time in strategy formulation and updating of the city master plans and are now being implemented by the newly established Local Economic Development Departments at the government level staffed by civil servants and supported by private consultants.

The Port Cities Development Programme (PCDP) was also one of the main tools to promote local economic development. The aim of this Programme is to develop the potential of strategic port cities in Yemen as engines for economic growth by creating an environment conducive to private sector-led growth and to the creation of employment opportunities in the three participating cities. The Programme worked on the transformation of the seafront fish market in Aden. The physical development of this area was seen strategic for various purposes, mainly: 1) linking it with an adjoining tourist attraction— an ancient Portuguese castle on Sira Island, 2) improving the working conditions and attractiveness of the market for Aden residents and visitors.

As a result of this action, fishing boats that dock at the market have increased from 60 boats in 2003 to 200 boats in 2009. The number of fish sellers in the market has gone from 50 to 230, and the number of fish restaurants in the area has more than doubled. Management of the fish market has been contracted out to the local Fishermen's Association (a model of good practice), which cleans the facility and leases out stalls to small-scale fishermen, generating a new revenue stream for the local government of about US\$25,000 annually.

Promising results also include a major upgrading of a small-scale industrial area, inner city road and mobility improvements, and restoration of two facilities that now serve as a city visitor center and investor services office. Involvement of the local community and tangible improvements to the city have inspired local businessmen to contribute funds to the newly-established Private-Public Partnership Fund, including over US\$350,000 to build a training center and initiate training programs in Aden.

Yemen cities exhibit significant cultural heritage and landmarks that include numerous cities and monuments of historical and cultural significance, three of which (Sana'a, Shibam and Zabid) feature on the UNESCO World Heritage List.

The country's heritage represents great socio-cultural and economic potential. Initiated in 2007 under a bilateral agreement between the Yemeni and German governments, the MEDINA Project was implemented in the historical cities of Shibam and Zabid (Box 1). The project has utilized heritage preservation as a strategic entry point to address the needs of a living community and develop wider urban renewal processes, improvements in housing conditions and local economic development. Notwithstanding the various constraints, the project succeeded in:

- Revitalizing and creating economic and social structures that restored urban vitality;
- Encouraging the active participation of residents in managing the renewal of their city; and
- Generating employment to 571 skilled labourers and 1,389 unskilled labourers.

Shibam Urban Development Project

The Shibam Urban Development Project (SUDP) was launched in 2000. GTZ (German Technical Cooperation) represented the German side, while the GOPHCY (General Organisation for the Preservation of Historic Cities of Yemen), under the supervision of the Ministry of Culture, was to implement the project on the Yemeni side. Due to its composition and stunning setting, Shibam was included on the UNESCO World Heritage List (1982-1984). Mud-brick high-rise buildings cluster in a walled mass that exudes the genius of Yemeni architecture. The Rehabilitation of the city of Shibam has won a 2007 Aga Khan Award for Architecture, which focuses on the preservation of this unique place as a living community with architectural restoration integrated into the creation of new economic and social structures. More than half the buildings have been upgraded and/ or restored so far. The program also integrates urban conservation into economic development, working with local NGOs to build skills and create job opportunities. The housing program has already quadrupled the demand for traditional construction work in the city and contributed to the local economy and the literacy programs have already educated 20% of the illiterate women in the district. Solid waste management was improved through establishing special urban management function in the district. The master builders of the city were associated to form a guild that promotes the trade and insures that government contracts in the city are done with local labor and in accordance with the city's historic conditions.

Reference: www.shibam-udp.org

4. Creating decent jobs and livelihoods

Yemen has been witnessing a political, security, and economic instability during political transition escalated to severe crisis after massive armed conflicts. The crisis caused significant security risks in several areas of Yemen, particularly in the Capital City of Sana'a, Taiz, and the Governorate of Abyan. Electricity output suffered considerably due to frequent acts of sabotage, and prices of commodities, fuels, and foreign currencies increased considerably. All these factors and others combined resulted in significant difficulties for Yemen's small and microfinance sector. These difficulties reflected themselves on MFIs that resulted in lower productivity (due to the increased level of risk, lower demand, and higher monitoring costs), postponement of all expansion, diversification and consolidation plans.

As mentioned previously, Yemen unemployment, and especially youth unemployment, is one the most pressing challenges faced by Yemen. The decline of new employment in the governmental sector and public sector institutions and the limited employment in private sectors caused a large-scale increase in unemployment from 16.2% in 2004 to 17.8 in 2010. The large-scale unemployment rate among females mounted to 54.6% and among the youth to 52.9%, while underemployment or partial employment was many times higher than that.

Some of the key facts about the labor force in Yemen include the following:

- 70% of the employed labor force works in the informal sector, and most of the formally employed work for the government or entities dependent on the government. This reflects a weak and sluggish private sector incapable of generating jobs.
- Between 2000 and 2010, the economy grew at an average 4.5% a year, down from an average 5.6% a year in the 1990s. While this rate of growth appears respectable, the country has also been characterized by rapid population growth, so that the growth in per capita GDP averaged less than 1.5% a year. ⁴ As a result, unemployment remains high, particularly among youth.
- Labor supply is growing rapidly with 120,000 new entrants in the labor market every year. Public sector cannot absorb new labor supply with 190,000 university graduates already waitlisted for jobs. Low female participation ~22% in labor force, mostly in agriculture.
- A shift in the composition of employment away from agriculture has been the main source of the increase in the average product of labor between 1994 and 2010. There is a large productivity gap between the mining sector, which includes oil and gas, and the rest of the economy. Agriculture is a low-productivity sector compared with the rest of the economy, and, as a result, there has been a steady outflow of workers from agriculture. The share of workers in the agricultural sector dropped from 54% of total employment in 1994 to

25% in 2010. This was matched by an increase in the relative weight of trade (from 10% to 22%), construction (from 6% to 11%), and other activities (notably, public services; from 21% to 28%). Nevertheless, the majority of workers are still in sectors characterized by low productivity such as agriculture (25% of workers), construction (11%), and trade (22%).

The political unrest came to put more pressure on the current weak employment structure of the country. Some estimations point out that about one million people had lost their jobs because of the recent developments and events in Yemen since 2011 and recent armed conflicts, which may raise the estimations of unemployment rate to about 40%. As a matter of fact, unemployment in Yemen mainly arises out of the weak capacity of the national economy to create sufficient employment opportunities for the new entrants to the labor market, on the one hand, and a mismatch between jobseekers' skills availability and skills required at the labor market, on the other.

Acknowledging the magnitude of this challenge, the GoY has given the issues of poverty and unemployment high importance in a number of national policies, strategies and plans, mainly the Poverty Reduction Strategy, the Economic and Social Development Plans for Poverty Reduction, Yemen Strategic Vision 2025, etc.

The National Plan for Employment 2014-2016 emphasizes the need to increase employment opportunities for youth with the provision of providing decent and productive job opportunities especially for the new entrants who annually join labor market.

The GoY Vision 2025 document, which emphasized the need to create productive job opportunities that would be necessary to turning the country towards the "new economy", stimulating the society to improve its productivity and its competitiveness in all fields and the development of a national system for creativity. Such a system transforms the individual from a job seeker to a generator of job opportunities and enables him to convert natural resources into commodities and services.

During the past two decades, in an attempt to alleviate poverty and unemployment in the country, among other development efforts, the Yemeni Government has focused on the development of microfinance industry. The Government, with the support of Yemen development partners, took the initiative of creating a Social Safety Net, to include the Social Welfare Fund, the Public Works Project, the Social Fund for Development, the Productive Family and Community Development Centers and a significant number of other Government and non-government programs and projects.

Yemen Vision 2025 defines the overarching aim to create productive job opportunities and stresses on the importance to create a broad base for small investments, in order to enable all social groups in the society to set up their own businesses or to provide job opportunities for such categories.

In 1997, microfinance in Yemen was introduced by the Social Fund for Development (SFD). Since then, the SFD through the Small and Micro Enterprise Development Unit (SMED), has been taking the lead role in implementing microfinance in Yemen. These efforts are implemented through Economic Development and a Job Creation Program, which channels microfinance services through intermediary entities such as NGOs, Microfinance Institutions (MFI) and banks. As a result of these efforts, by end 2014, there are 12 microfinance institutions operating in accordance with the best practices and in partnership with the SFD and the total number of active borrowers reached 101,871 individuals (46% women). The outstanding gross loan portfolio reached about YR 12 billion (about \$54.5 million), and the average value of loans YR 101,176 (around \$471). But in 2015 the loan portfolio was decreased to less than YR 8 billion.

The rapid growth of the microfinance industry in Yemen made it necessary to find a proper legal and institutional setup.

- From a legal perspective, a microfinance banking law (Law No. 15) has been issued in 2009 to endorse the establishment of microfinance banks. It promotes microcredit and provides banking services to small and micro enterprises in the rural and urban areas, with the final objective of promoting a pro-poor growth, reducing unemployment and poverty. Furthermore, it seeks to enhance social stability and equality of opportunities especially to the underprivileged categories in the society. The law regulates the establishment of microfinance institutions and sets their minimum capital requirement at YR500 million.
- The microfinance institutions (MFIs) provides a variety of products, including the individual and group loans, Islamic Murabaha loans, savings service, child's savings accounts and rural finance.
- From an institutional perspective, a number of foundations and companies have been created, such as: the National Microfinance Foundation (NMF), Al Awael Microfinance Company (previously known as Taiz Microstart) and Aden Microfinance Foundation.

6. Integration of the urban economy into national development policy

Sana'a, as Yemen's capital and largest city, enjoys a unique position within the national economy. In fact, the economy of Sana'a can be termed "a capital city economy," in terms of concentrations of national economic activities and employment and public sector administration. The economy is large compared to its population. The Municipality contains almost 16% of the nation's establishments and 22% of the nation's employment in establishments (as detailed in Table 6), most establishments owned by the Yemeni private sector and represented 94% of Sana'a establishments.

Table (6): Establishments and Employment in the Main Yemeni Cities (2004)

Governorate	Establishments		Workers	
	Number	% of National Total	Number	% of National Total
Sana'a	64,922	15.9%	252,257	21.6%
Taiz	45,391	11.1%	138,328	11.8%
Ibb	39,195	9.6%	80,903	6.9%
Hodeidah	36,909	9.1%	110,794	9.5%
Aden	16,547	4.1%	106,686	9.1%
Total Yemen	407,477	100%	1,170,031	100%

Source: Sana'a A city development strategy, p14 based on the Final results of Establishments Census 2004

The average size of establishments in Sana'a is small at 3.88 employees per establishment, but this is higher than the Yemen average (2.87 employees per establishment). Of all the main governorates, only Aden, at 6.44 workers per establishment, has a larger establishment size than Sana'a.

Commerce and small services are by far the largest sectors in Sana'a both in terms of establishments and in terms of employment (see Table 7). Also, there is a relative higher concentration of general administration, hotels and restaurants, and transportation employment in Sana'a compared to the Yemeni averages. Sana'a Municipality is the leading governorate in Yemen in terms of formal sector job creation and new economic projects. Over the 1992 –2006 period, 39% of all new formal jobs in Yemen were created in Sana'a, as well as 33% of new formal establishments.

Table (7): Percentage Distribution of Establishments and Employment by Economic Activity (2004)

Economic Activity	Establishments		Employment	
	Sana'a	Urban Yemen	Sana'a	Urban Yemen
Agriculture	0.2%	0.7%	0.3%	0.8%
Fishing	0%	0%	0%	0%
Mining and Quarrying	0.1%	0.1%	0.3%	0.7%
Manufacturing	12.1%	10.2%	12.5%	11.4%
Electricity, Gas & Water	0.5%	1.1%	1.1%	1.2%

Commerce and Services	58.9%	50.6%	31.3%	28.4%
Hotels and Restaurants	7.1%	4.7%	7.4%	5.5%
Transportation	4.8%	2.3%	4.0%	2.7%
General Administration	0.8%	1.1%	18.0%	13.4%
Education	1.5%	4.1%	9.0%	18.6%
Health and Social Work	2.7%	2.2%	5.3%	4.8%
Other Activities	11.2%	22.9%	10.8%	12.5%
Total	100%	100%	100%	100%

Source: Sana'a - City Development Strategy, p15.

Based on the above, it can be concluded that much of the fate of the nation's economic future is fundamentally tied to the capital's performance.

In an attempt to ensure a more balanced contribution of Yemeni cities to the national economy, the Cities Alliance in coordination with the World Bank and the Arab Urban Development Institute (AUDI), prepared the CDSs in the four cities of Sana'a, Aden, Mukalla and Taiz. One of the main outputs of this exercise is to identify for each of the four cities the key economic clusters that would present the greatest prospects for near term productivity growth and to gear investments in that direction. As such, the following was concluded:

Cities	Clusters that present the greatest prospects for near term productivity growth
Sana'a	Tourism, Handicrafts and traditional manufacturing, private health services, private education services and real estate and construction
Aden	Maritime, tourism, and manufacturing industries.
Mukalla	Hospitality and Tourism; Fishing and Fishing Products; and Construction and Real Estate Development
Hodeidah	Agribusiness; Fishing and Fishing Products; and Industrial Logistics.

The crucial role of cities economic base and their contribution to national economic development were highlighted in various governmental policy documents, mainly the Yemen Vision 2025. Free Zones were mentioned as one of the various economic sources of growth and promising sectors proposed in the State Vision. It was stated that, due to the strategic geographic location of Yemen, Free Zones represent one of the promising sectors for economic growth in Yemen. As such, reviving the role of the Port of Aden was identified as a main priority along with the establishment of other free zones (in Socotra, Al-Hodeidah and Al-Mukalla) in accordance with the promising investment opportunities in these zones. Vision 2025 emphasized on the regional and international role that Yemen can play in the trade, industry, investment, transit, storage and shipping activities. This would secure an increase in output, income and the creation of job opportunities for Yemeni labor.

Acknowledging the strategic role of Port Cities as engines for national economic growth, the GoY established in 1993 the Aden Free Zone (AFZ) with the aim of transforming Aden into a hub for international trade. It is comprised of 32,000 hectares of land (two-thirds of the total area of the Governorate of Aden) divided among 15 districts, allocated to different industrial, logistics, and services activities. Since 1996, the GoY has been working on the various operational requirements of the AFZ, including the development of the Aden Container Terminal (ACT) and the Industrial and Warehousing Estate, which includes six quays at a length of 1,650 meters with 16 m depth expandable to an 18 m depth in the future. The terminal has ample space for container storage, efficient yard operations, and service and administration facilities.

The AFZ Authority has licensed about 30 companies (mainly trade related) to establish offices in the ACT complex and about 45 companies to implement projects in the remaining parts of the Zone, of which less than 20 are operational. These companies include warehousing and a variety of manufacturing operations. Most projects are oriented to the domestic market, and include both foreign and local businesses.

7. Challenges experienced and lessons learnt

Yemen is facing a number of economic challenges. Those have been strained by the conflicts and violence during political transition causing massive destruction, loss of lives and a sharp decrease in the country's overall economic performance. Many of the productive sectors are struggling to survive, especially the Small and Micro Enterprises (SMEs) that represent a significant proportion of the country's economy.

Even before the outbreak of the current crisis, the government has not been able to use oil rents to promote productive activities and diversify the nonoil sectors of the economy. During the last 20 years, the oil sector has been responsible for about one-third of economic growth, while the remaining two-thirds of growth have been generated by services, mainly trade and transport, banking, and telecommunications. The decline of oil and the scarcity of Yemen's natural resources, water in particular have been the root causes of macroeconomic imbalances resulting in increased poverty and unemployment.

The municipal finance system is still dependent on central transfers. More than ten years after the introduction of the law for local authorities, the bulk of the local budget for districts is still supported by national subsidies. The increase in revenue collection on the local level is gradually being consumed by inflation. As a result, the local contribution to district budgets has never grown beyond an average of about 12-14%. The remaining part of the local district budgets comes from central government subsidies (about two-thirds depending on the year) and the shared resources collected on the governorate level (about one third). The bulk of those subsidies are line ministries' contributions to cover recurring costs (90%), only 4% is provided by the central government for new investments to be managed by local authorities.

Access to housing finance in Yemen is still at its infancy stages. The GoY should capitalize on the lessons drawn from previous state-lead housing programmes to elaborate a national housing policy that responds to the needs of deprived and low income households. Particular attention should be given to an increasing proportion of the youth segments of the society. The active involvement of the private sector should be an integral part of this policy. As such, a housing delivery strategy that is "end-users driven" should be devised and implementing through housing cooperative, development agencies as well as Public Private Partnerships.

The labor force is largely characterized by substantial gaps in education and skills, which limit the potential to fill the scarce well-paying jobs and undertake entrepreneurial ventures. In particular, female labor market participation remains low and needs to be increased, especially by promoting the education of girls and women at all levels, including in technical education and vocational training, which remains poor in quality and does not always respond to employer needs.

8. Future challenges and issues to be addressed by a New Urban Agenda

Yemen's severe poverty and unemployment, combined with its declining oil and water supply, create an urgent need to develop new sources of economic growth and employment for a rapidly growing population.

Moreover, Yemen's severe 'disruption' in the economy comes as a result of the forced transition away from its oil dependence. Had the Yemeni state effectively used the resource rents of the past decade and planned for the coming transition, the social impact would have been far less severe. As such, Yemen economy is facing today a transition away from dependence upon oil exports to a more diversified economy. However, the success of this transition is dependent upon the capacity of the state to manage the economy. Building a diversified economy based upon the variety of capacities that Yemen does possess will require:

Effective coordination of scarce investment resources,

- Strong bureaucratic capacity to manage state finances,
- Political legitimacy to survive the macroeconomic shocks in the global economy,

- The creation of trustworthy institutions, and
- All of these will help develop nurture and development the Yemeni private sector.

Being the location of much economic activity and wealth creation, cities in Yemen are the main engines of economic growth. Yet, their rapid growth and weak management are obstructing them from achieving this aim. As such, the following issues should be considered:

- With the forecasted increasing urbanization trend, cities in Yemen will be home to an increasing number of population. A national urban policy is urgently needed to allow cities provide urban dwellers with decent living, adequate shelter, improved services and infrastructure as well as jobs.
- Being the “capital city economy” that is significantly contributing to the national economy, Sana’a must adopt a strategy that stimulates private sector growth in ways that maximizes contributions to the national economy, complements economic activities in other urban centers, and provides support for national resource mobilization and crucially needed improvements in the national business climate. In addition, the central economic roles of the other cities should be enhanced to contribute to national economic development.
- The effective application of fiscal decentralization would be one of the key drivers for cities to promote local economic development and direct investments to respond to the present and future local needs. The existing municipal fiscal policy is not able to generate sufficient revenues to undertake the capital financing, operation and maintenance of a broad range of services.

VI. Housing and Basic Services

1. Slum upgrading and prevention

The increasing rates of urbanization, poverty and unemployment have led to the rapid surge of slums and informal housing in Yemen. The UN-Habitat Global Urban Indicators Database estimates that 60% of Yemen urban population lives in informal settlements. The cities that have been most affected by the rapid growth of slum populations in terms of severity include Taiz, Al-Hodeidah, Sana’a and Aden. In Taiz, for example, close to 70% of total residential built-up area of the city is informal and the vast majority of residential development since the 1980s has taken place informally. Most of the informal settlements have expanded onto mountain slopes, exposing the households to landslides and flooding.

The main characteristics of informal settlements in Yemen urban areas are: poor access to basic infrastructure and services like water supply and sewerage, garbage collection and street lighting; environmental degradation; lack of economic and educational opportunities; poor health care and; lack of security of land tenure.

There is no official standard definition of informal settlements in Yemen. Informal areas are usually labeled as “ashwa’i”, i.e. “random” areas with a connotation of chaotic and unlawful development. They are also often associated with poverty, marginalization and precarious housing conditions. The General Authority for Land, Surveying and Urban Planning (GALSUP) which is responsible for detailed planning of new residential neighborhoods inside cities, uses a very broad definition of informal areas. It considers all areas in which residential development takes place without an official land use and services plan and where construction is done without building licenses as “ashwa’i”.

Informal settlements as defined by the MoPWH include two types: squatters and slums. Squatters are human settlements that fulfill two main criteria:

- Do not have access to basic urban services
- Have not undertaken ex-ante planning and hence, are not included in formal plans.

Squatters are of two types: legal and illegal:

- The legal squatters: they are those that have been self-built on residents own land. The definition of a squatter depends on two criteria: 1) if the house that has been built on a land that does not have yet a land use plan or 2) it has been built on a land that has a land use plan but the overall conditions of the built house are very poor.
- The illegal squatters: occupying and building on vacant lands in regions that have been planned for public usage or regions that are exempted from planning (in mountainous hills and valleys).

In 2008, the GoY along with key international partners, such as the World Bank, has initiated a number of slum upgrading and re-settlement initiatives for dwellers of informal settlements in main cities like Sana'a and Taiz.

In Sana'a, with funds made available by Cities Alliance, the GoY (represented by the MoPWH) in cooperation with Sana'a Municipality conducted in 2007-2008 an assessment of informal settlements in the city. The study was able to identify a total of 35 informal settlements located throughout the city as well as on the urban fringe.

Most of those areas have been established between 1990-1995. A total of 23 areas were at least partially planned ex-post but plans were never really enforced and development continues largely informally.

The 35 areas were classified into four different types, including sub-types:

- Slum pockets (distributed all over the core urban fabric of Sana'a);
- Informal areas within or close to the core urban built-up area. These are areas that were mainly established on state land by forced returnees after the 1991 Gulf war and/or by poor rural migrants, low paid security personnel, low rank government employees and other lower income segments of society.
- Informal areas on the far urban fringe (a) alongside or close to major roads or (b) village extensions. This type includes the majority of the informal areas in Sana'a. Informal fringe areas are found all around Sana'a with the exception of the east where construction is limited by hills that are too steep for construction. Many of these areas developed at the periphery of the city alongside or close to newly constructed major roads or road extensions such as Taiz Road, Khawlan Street, Shamlan Street, Saada Road, the Airport Road and Marib Road.
- Informal areas on land that was reserved for (a) the preservation of public goods or (b) other non-residential purposes. They mostly include squatter areas on State land that has been assigned for public services or larger infrastructure projects or that has otherwise been reserved for non-residential use.

The total number of residents in these areas is somewhere between 313,000 (low estimate) and 390,000 (high estimate) who represent between 16.5% and 20.5% of the total population of Sana'a.

The assessment laid the foundation for the elaboration of a draft strategy to deal with the informal residential development. The strategy detailed seven key elements:

- Secure State land and land needed for infrastructure and services;
- Declare pilot development zones for guided fringe informal development;
- Carry out integrated upgrading projects in selected mature informal areas;
- Quickly identify tailored and feasible solutions for areas where crucial public goods are endangered;
- Create an information system that allows for continuous monitoring and effective needs assessment;
- Adapt planning tools and increase enforcement capacities; and

- Improve inter-sectoral approach for service provision.

The MoPWH implemented a two-pillar strategy to address slums and informal settlements in San'a:

- Constructing 1,150 housing units (surface 56 m²) to relocate slums dwellers. All houses were connected to services for free; and
- Squatters upgrading through planning and service provision.

Additionally, in 2010, the GoY started to focus on issue of upgrading through a joint project with the World Bank "Integrated Urban Development Project in Taiz". This US\$ 22 million with the aim of:

- Improving access to basic services in select informal settlements in urban areas in Taiz; and
- Strengthening dialogue on a national framework for urban upgrading.

2. Improving access to adequate housing

Over decades, the housing sector in Yemen has suffered from housing supply shortages and the inability to meet the households' housing demands. Since the unification of Northern and Southern territories of Yemen in the 1990s, the issue of housing affordability has become a major concern in the growing urban sectors of the Yemeni cities.

A national census report estimated that the magnitude of housing shortage in Yemen is about 214,866 dwelling units, while the total current housing in Yemen is 2,619,571 units, including 225,443 dwellings of tents and huts as well as houses made of wood and tin, with a total of 2,834,437 households nationwide (Yemen National Census, 2004). A report issued by the Ministry of Public Works and Highways Yemen in 2007 stated that the rate of depreciation of the existing housing stock is estimated at 5% of the total housing, which is equivalent to 1,200,000 dwelling units. However, the actual housing need in Yemen is projected at 787,069 dwelling units until 2010, which leads to an issue of the housing shortage in the future.

Access to adequate housing in Yemen is constrained by poor land management and unplanned urban sprawl in Yemeni cities. As a matter of fact, in most urban areas (Sana'a, Taiz, Al-Hodeidah and Dhamar), uncontrolled urban expansion is far ahead of plans. Urban sprawl already covers large areas which, if used efficiently, could accommodate the expected urban populations of these cities until 2025. Uncontrolled urban expansion is driven by two main forces, namely, (1) the demand for affordable land for individual housing, and (2) speculative investment. While this phenomenon of uncontrolled and inefficient urban sprawl is especially prominent in highland cities in Yemen, where most land is privately owned, in other coastal cities such as Aden, Mukalla, Al-Hodeidah, land is mainly in the hands of the state. The problem in these cities is more severe: State lands have been wastefully distributed in the past, causing the extreme scarcity of land suitable for affordable housing.

As mentioned previously, the absence of a national housing policy is impeding poor urban dwellers to access adequate housing, and hence, resulting in the increasing mushrooming of slums, informal settlements and poverty pockets. Housing affordability in urban areas remains the key concern. With the absence of a housing policy and the limited State and private sector intervention, it is the "owner-builder" mode of production that dominates the urban housing production scheme in Yemen. The main instrument of government response is an ex-post planning mechanism, i.e., the preparation and approval of detailed neighborhood plans that consist of the street layout and location of basic services such as a school, a mosque, and a garden. These detailed plans are not embedded in any broader structural planning or strategic vision and are usually not enforced. In practice, most post-planned areas look virtually the same as unplanned areas and planners themselves use the term of "takhtit 'ashwa'i" (random planning), which reflects the fact that development in post-planned areas continues largely informally.

In 1998, with support from UN-Habitat, the GoY represented by the Ministry of Public Works and Roads established the Yemeni National Urban Observatory (NUO). During more 15 years, the NUO, supported by four Local Urban Observatories (in Sana'a, Aden, Taiz and Mukalla), succeeded in collecting and analyzing various urban indicators. Being a tool for policy making, the NUO supported the GoY in assessing the housing needs, trends as well as drawing relevant strategies and programmes. The analysis of the housing indicators allowed to draw a number of conclusions, mainly, the need to provide 1,78,202 housing units, out of which 353,461 housing units in urban areas and 824,741 housing units in rural areas. Yemen annual projected housing need is 36,000 housing units distributed among all governorates.

The NUO was instrumental to allow the GoY implement housing programmes to alleviate the housing conditions of slums and squatters' dwellers in Sana'a and other governorates (as mentioned in section 28).

3. Ensuring sustainable access to safe drinking water

Yemen is a water-scarce country, situated in an arid region with no permanent rivers. The annual per capita share of renewable water resources does not exceed 150 cubic meters (the international figure is 7500 cubic meters/year). It is indeed the lowest worldwide.

This extreme water shortage is caused by a number of factors:

- Rapid population growth;
- Massive over-exploitation of the resources mainly by agricultural irrigation. It consumes an estimated 90% of the available water resources, of which over half is used for the cultivation of Qat (a highly profitable crop). The agriculture sector is not only the largest contributor to the national economy of Yemen, but also it employs the majority of the active labor force of the country which represents 60% of the labor in Yemen; and
- Dramatic depletion of groundwater levels, especially in Sana'a. As water becomes increasingly scarce, more and more illegal wells are drilled as a short-term solution. Yemen's official figures estimate that 99% of all water extracted is unlicensed and that 800 drilling rigs are operating illegally. The excessive extraction is also due to inefficient irrigation practices, subsidized fuel price, low cost of water extraction, unclear water rights, and unregulated extraction.

Growing water scarcity is exacerbating the country's existing social, economic and political instability. The country's rapid population growth is putting more strain on water supplies while human development levels remain low, making it difficult to increase adaptive capacity and resilience to water shortages and other climate change related impacts. The impact of the growing shortage is summarized as follows:

- Most of cultivated land will be uprooted and this will result of increasing the unemployment rate, and hence the poverty is going to be increased.
- Depletion of groundwater aquifer will contribute to deepening the water level and accordingly increment in the cost of water abstraction.
- The high drawdown in the aquifer will result in the deterioration of the water quality, increasing salinity due to sea water intrusion especially in the coastal area.
- The deterioration of water quality and the necessities for the usage of untreated wastewater for irrigation and agrochemicals (for example, 14.5 Kg/ha of pesticides o is used for Qat in Sana'a) resulted in the spreading of a number of diseases in Yemen.

In addition, the absence of an Integrated Water Resources Management (IWRM) is adding more strain water quantity and quality, impeding the sound implementation of reliable water policies.

Previous studies emphasized the importance of the usage of treated wastewater for irrigation to limit the impact of water shortage on un-employment, poverty, health deterioration and other socio-economic aspects. In Sana'a, for instance, the deficit, unemployment, raw waste water, Typhoid Cholera, and Hepatitis A will reach in 2030 60 MCM, 3500, 104000 MCM, 382000,

5500 and 477500 respectively (under the normal climate, 3.5% abstraction rate, medium irrigation efficiency, 60% sewerage system and the usage of treated and untreated waste water for irrigation)²⁹.

The situation has been aggravated with the escalation of conflicts in Yemen. The 2016 Humanitarian Needs Overview published by UNOCHA estimates that a total of 19.3 million people in Yemen now require humanitarian assistance to ensure access to safe drinking water and sanitation, of whom 9.8 million are in need as a direct result of the conflict. In urban areas, more than 6 million people have seen their water supply disrupted or cut due to conflict, and rural water supply schemes have stopped serving 2 million people

Acknowledging the magnitude of this problem, the GoY has implemented a number of water sector policy reform measures, mainly:

- Devising the Water Law in 2002;
- The establishment of the Ministry of Water and Environment (MWE) in May 2003, which aimed at creating an institutional structure for integrated water management and to prepare the necessary institutional and investment conditions to face the exacerbating water problem in Yemen. The MWE was charged with one of the most complex development problems in Yemen and its most challenging tasks, namely: the water scarcity problem and the challenges of providing drinking water to the urban and rural population, treating wastewater, water resources management and planning its use in light of the water law;
- Establishing the Agricultural and Fisheries Production Promotion Fund (AFPPF) to increase rural productivity, to fund various water structures to provide farmers with more water, and to improve water use productivity (or return from water); and
- Developing a National Water Sector Strategy and Investment Program (NWSSIP) 2005-2009 (updated until 2015) that proposes a set of institutional, financial and other measures, which are aimed at addressing discrepancies in the following five sub-sectors: Water Resources Management, Urban Water Supply and Sanitation, Rural Water Supply and Sanitation, Irrigation and Watershed Management and Environment The NWSSIP investment program (2005-9) totals about \$ 1.5 billion, of which almost \$1 billion was made available by government and donor funding.

Supported financially and technically by several international players, including the GIZ, World Bank, the Embassy of the Kingdom of the Netherlands (EKN), Yemen was able to achieve significant progress in the urban water and sanitation sector. The reform has dramatically reshaped the sector shifting power away from a central authority to local agencies. Better customer services, more financial stability, and better protection of the least advantaged groups are some of the most positive outcomes of the reform initiative.

Driven by these reforms, a number of international organizations, in cooperation with the GoY, have implemented an array of water-related projects. Some of these are summarized in the below table:

Institution	Projects
World Bank (International Development Association-IDA)	Funding to projects that helped improve irrigation efficiency to save 50 million m3 of water on 41,000 ha; increased reliability and monitoring of urban water infrastructure, reducing unaccounted-for-water by 10-15%; supported institutional reform to bring together government water-related institutions; and develop seven-year National Water Sector Strategy and Investment Plan. Examples of IDA supported projects since 2000: - Urban water reform: Sana'a Water Supply and Sanitation project (US\$24 million, 2003-2009) and Urban Water Supply and Sanitation project (US\$150 million, 2002-2010); - Demand-driven approaches: Rural Water Supply and Sanitation Project (US\$40 million, 2000-2009) and Yemen Social Development Fund (US\$75 million for phase III, since 2004);

²⁹ Decision Support System for Integrated Water Resources Management of Some Basins in Yemen, PhD, Faculty of Engineering, Cairo University/2010

	<ul style="list-style-type: none"> - Basin planning: Support to the National Water Resources Authority in establishing representative basin committees armed with accurate information on water balance and projections made by computer simulation basin models based on the meteorological and groundwater data collected by field staff. Sana'a Basin Water Management Project (US\$24 million; 2003-2009); - Improved water use efficiency: Groundwater and Soil Conservation Project (US\$55 million; 2004-2011) and Irrigation Improvement project (US\$21 million; 2000-2008); - Committed US\$90 million to a multi-donor Water Sector Support project (WSSP; US\$340 million, 2009-2014) that supports the government's national water strategy.
GIZ	<p>German and Yemen governments have partnered together for over 20 years on technical improvements in Yemen's water sector, primarily focusing on urban areas. Since 2006, the German government has partnered with Yemen on the Yemeni – German Water Sector Program. The program has five approaches: (1) consolidation of sectoral reform; (2) human resource development; (3) development of autonomous, commercial water and sanitation utilities; (4) decentralization of water resource management; and (5) strengthening local actors in arid zones to promote sustainable water use. Thanks to the program, cost recovery by water utilities has increased, additional connections have been installed and service is more reliable, sanitation and wastewater treatment has improved, and local-level water saving measures are being implemented.</p>
JICA	<p>Support to the Yemeni government's National Water Sector Strategy and Investment Programme (NWSSIP) (2005-2009), which proposed a set of measures addressing water sector issues and promotes the conservation and better management of water resources. Between 2005 and 2007, JICA conducted "The Study for Water Resources Management and Rural Water Supply Improvement in the Republic of Yemen" which framed a plan for introducing rural water supply projects, as well as formulated the action plan for water resource management for Sana'a Basin which is at risk of water depletion. More recently, In 2009 JICA announced the implementation of the Rural Water Supply Project In Yemen (2009), which is based on the study mentioned above. JICA's activities also include rural water supply projects focusing on new construction and rehabilitation of 19 sites in five governorates: Sana'a, Ibb, Taiz, Almahwet and Dhamar. About 150,000 people are expected to benefit from this project.</p>
Islamic Development Bank (IDB)	<p>The (IDB) partnered with the British government on the £1.2 million joint pilot Water and Sanitation Project to improve access to sustainable water and sanitation for 36,000 people in Al-Howta in 2008-2011. The IDB is also instituting a US\$21 million water availability enhancement project to improve infrastructure and management in Sana'a</p>
IFAD	<p>Three of IFAD's six current projects in Yemen support improved agricultural irrigation and access to water. Approaches include improvements in livestock practices, rainfed agriculture, rural infrastructure, and community based natural resource management. To date, IFAD has supported over US\$250 million in water-related projects in Yemen.</p>
UNDP	<p>It has provided technical and financial assistance to develop the Hadhramout and Tuban-Abyan Water Basin management plans, which will improve water access to over a million people in the three governorates. The organization also funds the National Programme on Integrated Water Resources Management, a US\$3.4 million project to strengthen the National Water Resources Authority, improve water resources information collection and management, enhance local governance of water resources, and raise awareness on water use and management.</p>
Private Sector	<p>In 2009, for the first time, the General Investment Authority in Yemen called on the country's private sector to compete for projects to desalinate seawater in order to help resolve the current issue of water scarcity, as well as the future fear of drought. The authority maintains there is a need to establish and encourage "small to medium-sized desalination projects" in Yemen, primarily as a short-term response to increased demand for water, and to ensure that Yemen can benefit from the latest in desalination techniques. The aim is to further the acquisition of knowledge and expertise on how to establish and operate desalination plants. In early 2010, a Yemeni-Saudi firm began implementation of a water desalination station in the western port city of Hodeida. The \$31 million project is considered the largest of its kind and is anticipated to help reduce random well drilling in the province.</p>

4. Ensuring sustainable access to basic sanitation and drainage

The rapid population growth and the high rates expansion of urban services pose pressure on available resources and services to meet the growing demand of existing and new inhabitants.

As mentioned previously, the sanitation sector was also reshaped by the reforms carried out by the GoY resulting in significant progress. These reforms primarily addressed the governance structure of the water and sanitation sector resulting in a decentralized form of service provision. However, the GoY has fallen short in providing adequate sanitation and drainage services to an increasing number of population.

According to a recent National Social Protection Monitoring Survey published by UNICEF (2012-2013), 52.5% of household members in Yemen use an improved source of sanitation. However, disparities in accessing basic sanitation and drainage are widely present. The proportions vary remarkably between the urban and the rural settings. While the majority of the urban population has a proper sanitation system, less than 40% of the population in rural areas have access to this kind of service. Additionally, the disparities in accessing this service vary according to the income of people. The survey reported that the use of improved sanitation facilities is nearly universal among the richest population (96.34%), while only 5.1% of the poorest are using an improved sanitary means of excreta disposal. For example, in Taiz, the Urban Poverty Analysis (2006) showed that only 25-30% of the city's population is connected to the sewerage and wastewater network.

The National Water Sector Strategy and Investment Program emphasized the challenging need of providing sanitation services to the great majority of urban and rural populations who still lack such services. Wastewater treatment plants have been installed in Sana'a, Taiz, Ibb, Hajjah, Aden, Amran, Al Hodaida, Dammar, Yarem, and Radaa. The largest wastewater treatment plant in the country, located in Sana'a, was completed in 2000, but it had to be upgraded between 2003 and 2005 due to deficiencies in its operation.

Disparities in service provision are also significant when addressing the solid waste sector. While it is estimated that less than 40% of the nation's solid waste is officially collected and disposed of, this percentage varies from over 90% in the two main cities of Sana'a and Aden, to less than 20% in nine of the twenty-two governorates of the country. Records show that there are 21 controlled or semi-controlled disposal sites and 27 open dumps. The actual number of open dumps is much higher since many towns and cities each have more than one area where wastes are dumped.

A number of measures have been implemented by the GoY concerning the Solid Waste Management (SWM) sector:

- A National Strategy for Solid Waste Management (2009-2013) was developed and approved by the Cabinet in 2009, Resolution No. 181. This strategy defines priorities and targets, as well as the responsibilities of the different government agencies; it also coordinates donor support in the waste management sector. The strategy is augmented by a National Investment Plan.
- Issuing the Public Cleaning Law number 39 of 1999, which has defined solid waste management services and clarified the role of the local authorities.
- Issuing Law 20 of 1999 for the set up of decentralized City Cleaning and Improvement Funds (CIFs). This law has decentralized the financing of solid waste management by enabling the local authorities to fund their own services.

The on-going crisis has severely affected the SWM sector in Yemen. Local authorities have seen their capacities drastically reduced to sufficiently provide and finance waste management services. Human and transportation resources to collect waste from all dump sites have also been seriously affected. Fuel shortages led to waste accumulation in the streets, reduction in waste collection frequency and the use of improvised alternative disposal sites. This was particularly exacerbated in main cities like Taiz where street fighting erupted and constrained access.

5. Improving access to clean domestic energy

Yemen is the least electrified country in the MENA region with only about 40% of the population having access to electricity. In rural areas, access levels are much lower at about 20% of the rural population. The absence of a reliable and a continuous supply of electricity and low access to electricity in rural areas have been recognized as a severe constraint on the economic growth of Yemen.

As a response, the GoY has committed through the Power Sector Development Strategy Note of 1997, updated in 2006, to implement a nationwide rural electrification programme. Based on preparatory market assessment studies conducted through a GEF-funded Rural Electrification and Renewable Energy Development Project (REREDP), the Cabinet approved a Rural Electrification Policy Statement (REPS) in July 2008. The National Rural Electrification Strategy will result in increased access for over 520,000 new rural households that will increase access from the current level of about 20% to about 46% of rural households and benefit more than 3.5 million people. Other initiatives included the World Bank Rural Energy Access Project (2006 to 2015) that aimed at improving electricity access of rural populations in the selected project areas and to demonstrate the feasibility of increasing the access to electricity of Rural Households (RHH) in off-grid areas through implementation of Solar Home Systems (SHS).

On the institutional front, The Ministry of Electricity and Energy is responsible for the electricity sector, as well as electricity policy, the issue and licenses and almost all decisions of consequence except tariffs. The main institution involved in the development of renewable energy policy in Yemen at present is the General Department for Renewable Energy of the Ministry of Electricity and Energy. The main responsibility for implementation comes under the Public Electricity Corporation (PEC) and is discharged through the Public Authority of Rural Electrification (PARE) and the Renewable Energy Department that comes under it. The PARE is responsible for rural electrification in general (mainly grid extension) and its agency, the Renewable Energy Department covers off-grid renewable rural electrification. The Rural Electrification Authority, established under the supervision of Minister, is to implement the national plan for rural electrification. It enjoys financial and administrative independence and be legally competent to make agreements and enter into loans.

In March 2009, a new Electricity Law, which sets out to improve the management of the power sector and to facilitate investment by private capital, was issued. One of the stated objectives of the law is to encourage environmentally friendly power production including renewable energy and relying on it as a sustainable source of energy. It tasks the Ministry of Electricity and Energy to encourage and develop the use of renewable energy resources in the generation of electrical power. In addition, the law creates a regulatory office to be known as the electricity Sector Regulatory Board as well as a new authority called the Rural Electrification Authority.

ESMAP (Energy Sector Management Assistance Program by the UNDP and the World Bank) conducted a Yemen Renewable Energy Framework in 2011 to assist the government to develop and implement a policy and contractual framework to support the large scale, commercial wind development by both the public and private sectors

Yemen has vast untapped potential of renewable energy sources. Several studies including the Clean Development Mechanism (CDM) potential in Yemen have indicated the renewable energy potential particularly related to solar, wind, geothermal, and biomass are encouraging. The four naturally renewable sources exist in abundance in Yemen and can be harnessed and utilized to meet the country mounting demand for energy towards low-emission economic growth. A recent study by the Ministry of Electricity has outlined the various aspect of potentiality for five types of renewable energy in Yemen.

It is worth noting that among the five sources of renewable energy in Yemen, solar has the largest gross technical potential but ranks second after wind in terms of gross practicable potentiality. The average solar radiation is about 18 - 26 MJ/m²/day over 3,000 hours per year clean blue sky and the theoretical potential for solar electric using concentrated solar power (CSP) reaches about 2.5 million MW. Wind energy on the other hand reaches a potential of 308,000 MW and Geothermal potential of about 304,000 MW. However, the current energy mix in Yemen is dominated by fossil fuel (about 99.91%) while renewable energy share is estimated about 0.009%.

As such, in June 2009, the government approved the National Strategy for Renewable Energy and Energy Efficiency which aimed at: 1) optimizing the use of energy from domestic sources; 2) increasing the share of renewable energy in electricity generation to 15–20% by 2025; and 3) promoting sustainable development of the electricity sector.

Yemen has developed a five-year plan with private sector investors to set up a wind power plant at a total cost of \$320 million to generate 182 megawatts of electricity.

In 2011, a grant of US\$20 million for Yemen to finance the ever first wind park project at Mocha on Yemen's Red Sea coast has been approved by the World Bank's Board of Executive Directors. The project consists of the development and construction of a 60 megawatt wind power farm, the first ever for Yemen, which will increase the country's supply of cost-effective electricity from renewable sources. The implementation of the Mocha Wind Park Project will help Yemen meet its increasing electricity needs with environmentally friendly, renewable energy with the potential of reducing Yemen's dependence on fossil fuels. Compared to the liquid fuel generation that currently dominates the Yemeni power system, the generation of this lower-cost, wind-powered electricity will contribute toward improving the sector's financial position and reducing the need for energy subsidies.

A number of development partners have come together to support the project. The Arab Fund for Social and Economic Development will contribute US\$65 million, while the OPEC Fund for International Development and the Saudi Fund for Development will each provide US\$20 million. The grant from the World Bank Group will support the construction of the wind power farm as well as consulting services and capacity building to support project and program development through a private-public partnership.

6. Improving access to sustainable means of transport

With rapid urbanization and economic growth, motorization has been accelerating in Yemen. The rapid increase in the use of the private vehicles has resulted in increased traffic congestion, accidents, inadequate parking space and air pollution, among other problems, as detailed in sections 11 and 17. In Sana'a, Yemen, the majority of trips are made by public transport modes, with an approximate share of 60% of trips made by informal minibuses and taxis. Informal collective transport modes, on average, represent 40% of vehicles in traffic in Sana'a, including minibuses (6%), minibuses (12%), standard and tourist buses (2%) and taxis (19%), while private cars and trucks represent 33% and 25% of vehicles in traffic, respectively.

The heavy reliance on vehicles for transport poses a number of challenges that include among others: increased air pollution, high rates of car accidents and high rates of human casualties caused by car accidents. Road safety is a major concern in Sana'a. For instance, it is believed that 40% of all traffic accidents in Yemen occur in the Sana'a region. The main causes of accidents are the following:

- A general lack of proper road safety devices (signing, marking, traffic islands, delineators, etc.);
- A lack of consistency in the design and construction of transportation facilities, confusing drivers and increasing the probability of accidents;
- Inadequate road planning: speedways built without integration of the surrounding areas, lack of protection of traffic joining the main road, presence of numerous very dangerous U-turns; and
- A prevailing aggressive behavior of drivers, combined with a poor respect of driving rules and regulations, due to weak awareness and enforcement.

Additionally, as mentioned in the previous sections, the streets are not properly designed for pedestrians in general and for the elderly and people with special needs in specific. The National Disability Strategy (2010) was designed with aim of facilitating the integration of disability issues into government strategies, planning and programmes. While some progress

has been accomplished in addressing accessibility issues in employment and health sectors, progress in other important sectors such as the transportation sector were absent. Unfortunately, the Ministry of Transport does not have a plan or programme that addresses accessible services for persons with disabilities.

7. Challenges experienced and lessons learnt

Provision of housing and basic services to the people of Yemen have for long been one of the main challenges of the State. The design and implementation of various policies, strategies and programmes were obstructed by a number challenges that would allow us draw a number of lessons learnt.

The slum upgrading experience remains incomplete if not addressed in an integrated manner. With the absence of a national housing policy that addresses also informal residential development, the expansion of slums and informal areas shall remain a central challenge in Yemen. Common challenges that should be addressed in these area relate to:

- Service provision and upgrading of deficient services and finance of needed investments;
- Lack of or inappropriate planning that takes place without a vision for the incorporation of informal areas in a more comprehensive plan for the city; and
- Challenge to secure land for infrastructure and service provision because of encroachment on state land and inflating land prices.

Given the specificities of Yemen context, it is neither practical, nor affordable for the government to rapidly provide decent shelter including new housing for people living in informal settlements - providing basic municipal services (public goods) is the best that Government can accomplish. Given the added complexity of land issues, the best alternative to moving people or replacing their homes is in-situ upgrading. It is important to highlight that upgrading may not address the broader issue of housing supply and overcrowding, but it does have a number of advantages, mainly:

- Creating visible impacts in terms of improving the living and environmental conditions of the poor; and
- Retaining the social fabric of the communities and allows for greater densification of neighborhoods.

However, it is worth noting that the lack of effective land registration and unclear records of ownership does pose a risk to urban upgrading in informal settlements in the event of future land disputes.

Delivery of urban infrastructure in Yemen is also constrained by limited and weak local revenue generation capacity and correspondingly low levels of capital investments. The major revenue sources for local authorities include local current revenues (taxes, fees, charges), governorate shared revenues, general shared revenues, donations from private or bilateral donors, and annual central recurrent transfers and investment subsidies. The overall scarce resources prevent Local Authorities from generating operational surplus, since their recurrent revenues are tied or hardly sufficient for financing recurrent expenditures which consists largely of wages. Their development Projects are almost exclusively financed by development grants, which, however, do not provide funding for operation and maintenance of the newly built infrastructure or service assets. This has contributed to the problem of low levels of capital investment at the local level. As a consequence, only an average of 10-15% of total local expenditures is devoted to capital investments, which represents about US\$6 per capita.

Addressing the issue of water scarcity is an urgent requirement. The emphasis should be placed on improving the operational performance of the utilities to reduce losses and increase supply through expansion of water and sanitation coverage, including new sources of water and waste-water treatment plants. Other key requirements include: strengthening state institutions and increasing their capacities to address the water crisis; improving agricultural efficiency through the reduction or exporting Qat production, and developing information

resources (such as remote sensing and GIS techniques that have the potential to improve water resource management).

Urban and transportation planning are not well integrated, leading to sprawl, land degradation, and increased vehicle use. These trends are exacerbated by the rising demand for transportation and the excessive reliance on private cars, which are driven by increased urbanization, high-income life style, and economic growth. A sustainable urban transport system requires strengthening various features of the system including mobility, accessibility, affordability, social equity, efficiency, safety, security, convenience, low carbon, comfort, and people- and environment-friendliness. In order to achieve all these elements, various challenges need to be addressed in an integrated manner. These challenges include improving human health through the reduction of urban air pollution, tackling climate change, reducing the number of deaths and injuries from road accidents, controlling excessive motorization, improving public transport services, encouraging more walking and cycling, and recognizing the specific needs of urban poor, women, the elderly, people with disabilities, youth, and children.

8. Future challenges and issues to be addressed by a New Urban Agenda

It is considered necessary to develop a strategy that deals not only with existing informal areas but addresses also the phenomenon of informal residential development as an ongoing dynamic. The improvement of living conditions in squatter settlements and the socio-economic integration of the poor in the city's fabric is a pressing future priority. In addition, a prevention strategy for the emergence of informal areas should be considered in order to address this ever growing urban phenomena.

Service delivery in key infrastructure sectors like water supply and sewerage is not keeping pace with rapid urban growth. The deteriorating condition of groundwater aquifers, as a result of overdraft, is still continuing, and population growth is faster than the rate of building new water supply schemes. This highlights the importance of concentrating efforts on water demand management to rationalize water use. For any investments in the water and sanitation sector, there is an inherent risk that capital investment may be underutilized and that the associated economic rate of return may be lower. A public private partnership scheme should be designed for improved management of the water sector.

The lack of comprehensive planning of transport systems, without due consideration to social, economic, environmental and cultural elements of the city, can result in physical breaks in the fabric of communities and reinforce social exclusion. Yemen is in dire need to increase sustainability of urban passenger transport systems. This can be achieved through modal shifts – by increasing the modal share of public transport and non-motorized transport modes (walking and bicycling), and by reducing private motorized transport.

ANNEXES

ANNEX 1 Case Study: Implementation of Taiz Municipal Development and Flood Protection Project (TMDFPP)

ANNEX1:

Case Study of Taiz Municipal Development and Flood Protection Project (TMDFPP)

1. Introduction

After the reintegrated of both parts of Yemen in 1990 as Republic of Yemen (ROY) the third urban development project was developed in Taiz city. The project was included in the third five-year development plan (1988-1992). During the project preparation, the studies were revealed that, the flood control measures should take priority over all other works. Taking into consideration the financial constraints the projects were conceived to be implemented in phases from essential control works providing the most needed protection concentrated in the old City to the development of comprehensive flood control measures in the whole city.

Under the World Bank (WB) assistance, the works constructed under three phases (I, II and AF1) and included about 8 Wadies as well as its branches within the city of Taiz. The works under the three phases were started on 1990 and completed on October 2010. Works constructed under Phase-I was completed in 1998 and was concentrated in and around the old city, where the flood flows were causing greatest damage and disruption to the life and property of Taiz Citizens. The other phases included both additional civil works to extend the drainage works constructed under Phase I and improve flood protection and drainage in other Wadies or parts of Taiz City.

Also, In response to the GOY's request, the World Bank (WB) redeployed an existing IDA supervision mission to carry out a rapid scoping of the disaster effects caused by a level-three tropical storm struck Hadramout Governorate Between October 23-25, 2008 and to contribute to the construction, recovery and vulnerability reduction effort. In this regard, the WB agreed to provide and to sign Emergency financing agreement under the TMDFPP project as a second Additional Financing to the TMDFPP. The following table-1 summarize the approval, effectiveness and closing date of TMDFPP-II original, first (AF1) and second (AF2) additional financing:

Table - 1 Approvals, Effectiveness and closing dates of Projects

Project Name	Credit or Grant Effect	Original/ Actual Closing Date
TMDFPP-II Original (Credit No 375 0-YEM)	26/02/2002	31/12/2005 - 30/06/2008
TMDFPP (First AF1) Credit No 375 1-YEM	18/06/2008	31/10/2010
Emergency Flood Protection Second (AF2) (Grant No. H459)	21/05/2009	15/05/2013

2. Project Location and Description

2.1. (TMDFPP) Phase-II and first additional financing (AF1) in Taiz

The proposed Phase-II original and AF1 projects works are wholly located within Taiz City which is approximately 260 km South of Sana'a, the capital of Yemen. Taiz lies at an altitude between 1200 to 1400 m at the Northern foot of Sabir Mountain, which rises to over 3000 m. Parts of the City lie on steeply sloping land with an overall trend of a decrease in slope from South towards the North. Taiz lies in one of the wetter areas of Yemen, with an average annual rainfall between 500 and 600 mm. Most of the rainfall occurs between April and October. Only about 10 – 15% of the annual rainfall is during the period from November to March. Much of the rain occurs as a result of short and intense storms. The works in both projects includes both additional civil works to extend the drainage works constructed under Phase I and improve flood protection, surface drainage and surrounding area by providing a lot of services such as sewerage, retaining walls, stone pavement, asphalt pavement ----etc. in other parts outside the old of Taiz City. Also includes other municipal developments activities which are generally directed at supporting the Government of Yemen's move towards greater devolution of local administration.

2.2. (FPERP) Work under second financing (AF2) to TMDFP in Hadramout Governorate

Works under the second additional financing (AF2) wholly located within Hadramout governorate. These include the rehabilitation and reconstruction of priority damaged segments of the regional road network and the flood protection systems in Hadramout governorate. The project also financed selected institutional and technical assistance activities which will help strengthen the government's capacity in disaster preparedness, mitigation and response at the local level.

3. Project Objectives

3.1. Phase-II, first (AF1) and second (AF2) additional financing of (TMDFP)

The TMDFP development objectives (under Phase-II original, first (AF1) and second (AF2) additional financing) are to assist the GOY in: (i) protecting residents, economic activities and infrastructure from the destructive effects of seasonal flooding in Taiz, and Hadramout Governorates (ii) restoring access to critical road infrastructure damaged by the floods and; (iii) strengthening the capacity of local governments and supporting decentralization.

4. Project Preparation and Design

4.1. Phase-II (TMDFP)

- a) The contract for consultancy services to update and prepare the design study and tender documents was awarded to Halcrow International Partnership (England). Six bids (contracts) (2A,2B,2C,2D,2E and 2F) were prepared by the consultant.
- b) Invitation for pre-qualification was advertised in UN Development. Business and in a local Yemeni Newspaper Al-Thwra. Twelve contractors including three domestic contractors were pre-qualified.

4.2. Preparation & Design of TMDFP under first (AF1)

Ten tender documents of civil works were prepared (2H1 to 2H10) by the PMU Local engineers of TMDFP. All contracts (Civil works) agreed to be tendered following ICB procedures. Also as agreed, the project designed to be constructed in ten separately tendered construction packages, i.e. contracts. Bidders were eligible to bid for any or all of the contracts but a limit has been set on the total number that can be awarded to a single contractor. This limit is set at a maximum of two (2 No) contracts.

4.3. Preparation and design of FPERP in Hadramout Under Second (AF2) to TMDFP

.A consultancy assignment for preparing the detailed designs and tender documents of the road rehabilitation sub-component, including the study of feasibility of the two sections that may require further improvements carried out by M/S CES (India).. Five Road contracts (CIVIL Works) were prepared (RR1,RR2,RR3,RR4 and RR5). As a result of prequalification, out of 15 interested contractors for prequalification, only 8 contractors were prequalified or conditionally prequalified has been considered invited to receive the tender documents and provide their offer.

5. Project Components

The Phase-II TMDFP implemented under three components while the First and Second Additional Financing implemented under two components, Since, component 2 was no longer be financed under the first and second additional financing, as no resettlement were required under the projects first AF1 (TMDFP) and second AF2 (FPERP)..

More details are shown as follows:

5.1. Phase-II Original of TMDFPP Components

Component (1): This component contains the implementation of civil works to construct flood control structures, peak Period maintenance, Al- Amerah Dam Maintenance and procurement of maintenance equipment and project institutional program.

(Component 2) Resettlement Action Program (RAP): The social assessment (SA) carried out by the Bank during the preparation of TMDFPP revealed that some squatters lies along wadis specially down stream of Wadis (W4 & W5) will be affected by the Phase-II original project implementation.

(Component 3) Local Bodies Capacity Building: This component consists of the provision of Technical Assistance, goods, training and infrastructure.

5.2. (First Additional Financing) (AF1) of TMDFPP - Components

Component 1: The greater portion of the investments was devoted to public infrastructure upgrading and extension (mainly roads, wastewater network connections, and footpaths) and to a lesser extent flood structures and retaining walls that were designed to protect infrastructure and property from flood damage. As indicators, The civil works includes the construction of about: (i) 5.1 kilometers of flood damage protection channels to protect populated areas, (ii) 22 kilometers of street paving in tributary areas to the flood damage protection structures to improve rainfall surface drainage and prevent soil erosion to minimize maintenance of flood structures while improving pedestrian and vehicular access; (iii) 1.5 kilometers of retaining walls to protect built-up areas and nearby flood and road infrastructure assets from potential risk of landslides; (iv) 2.4 kilometers of footpaths in steep walkways to control erosion while providing safe pedestrian access; and (v) 13.8 kilometers of sewage collector pipes and about 2,000 connections to reduce water pollution caused by sewage discharges onto the flood channels.

Component 2: was no longer be financed under the additional financing, as no resettlement would be required under the project. The proposed set of civil works projects noted in Component 1 above are identified and have been reviewed by an independent social specialist and determined not to require any resettlement

Component 3: consists of the following main subcomponent which was proposed to be carried out under the first additional financing:

- Traffic Management Study;
- GIS Capacity Building and Preparation of Detailed District Development Plans
- Strengthening Land Management which includes the provision of some needed equipment. to GALSUP (study and goods);
- Landfill Solid Waste Management system Design;
- Integrated Environmental and Social Impact Assessment IESIA;
- Ibb Flood protection study which includes the design and preparation of tender documents for Ibb flood Protection.

5.3. AF2 (Second Additional Financing) Components in Hadramout (HFPERP)

Component 1: This component carried out the civil works for rehabilitating and reconstructing selected priority regional roads where critical segments have been destroyed by the flooding to adequate flood-proof standards, and retrofitting with adequate storm water drainage systems that could withstand future flooding events. Also under this sub-component an amount of 10% of total value of this component (value of civil works) was estimated and allocated for urgent repairs of segments that cause serious risks to motorists, which from a safety point of view were not advisable to wait for competitive contracting. As agreed, this amount currently used for retroactive payment and the use of force account to the benefit of GCRB via a performance-based contract based on existing established unit rates used by the (RMF).

Component 2: It was observed that, No resettlement has been required under the project.

Component 3: This component includes strengthening the capacity of local governments in disaster risk management and reduction by including preparation of a flood protection plan for the critically damaged and vulnerable areas of Wadi Hadramout; a storm water drainage master plan for Mukalla city; and setting up local government capacity in disaster preparedness, mitigation and response; and provision of support to the PCU through financing the cost of consultancy services for design and construction supervision, other short term consultancy services, and independent annual audits of project financial.

6. Projects Costs by Components and Financing

Both Projects under TMDFP-II original, first (AF1) and second (AF2) additional financing are co-financing projects between the Government of Yemen and IDA. The Government Share represented 10% of project value and IDA share represented 90% of project value. .

More details about the estimated costs and the sharing of GOY and IDA by components for TMDFP-II Original, first AF and FPERP under Second (AF2) for emergency additional financing Grant are indicated below:

Table - 2 Estimated Cost by Components, GOY Share and IDA Share

Project Cost by Component	Original Phase-II (Credit No. 3575 -0- YEM)			First Additional Financing (Credit No. 3575 -1- YEM)			Second Additional Financing (Grant No. H459)		
	GOY US\$ Million	IDA US\$ Million	Total US\$ Million	GOY US\$ Million	IDA US\$ Million	Total US\$ Million	GOY US\$ Million	IDA US\$ Million	Total US\$ Million
Component (1)	3.565	32.085	35.65	1.80	16.50	18.30	5.7	32.8	38.5
Component (2)	0.3	2.7	3.00	0.00	0.00	0.00	0.00	0.00	0.00
Component (3)	1.12	10.22	11.35	0.26	3.50	3.76	0.30	2.2	2.5
Total	4.8	45.2	50.00	2.06	20.00	22.06	6.00	35.00	41.00

7. Project Procurement Plan

The procurement of Works, Goods and Consultants under the TMDFP Original, first AF1 and second AF2 prepared by PCU from time to time based on the financial Agreements Threshold for each component.

8. 8.0 Project Coordination and Implementation Units

All activities under the TMDFP-II original, TMDFP first (AF1) and second(AF2) additional financing were implemented by highly effective Project Coordination Unit (PCU), based in Sana'a complemented by two Project Implementation Units (PIUs) based in Taiz and Hadramout respectively. The PCU enhanced by a newly hired Monitoring and Evaluation (M&E) specialist.

9. Project Implementation

The works under Phase-II original, first additional financing (AF1) started in February 26, 2002 in Taiz city and was completed in October 31, 2010, as well as the works under the second financing (FPERP) started in 21 May 2009 in Hadramout and was completed in 31 December 2014, all works includes those financing agreements (TMDFP) were implemented under three components as follows.

- Component –1: Construction of flood protection structures;
- Component –2: Resettlement of the project affected people (PAP);
- Component –3: Capacity building of the local council.

10. TMDFPP Outcome Indicators

10.1. Taiz

Under Infrastructure and flood protection works (Component 1):

I. The TMDFPP has exceeded its flood protection structure and associated infrastructure delivery targets due in part to cost savings on civil works contracts and currency gains resulting from appreciation of the SDR against the US Dollar. Overall, the flood protection infrastructure target of 13.11 kilometers was about 24.62 kilometers of such structures (Open channels, Closed channels and Box culvert) were implemented throughout the city by completion of the works in October 2010. In addition, substantial upgrading roads of 61.00 kilometers length was targeted as a baseline nearly 67.5 kilometers of newly paved with asphalt, concrete, Local or Habash roads were implemented, 21 pedestrian bridges against the same was targeted baseline, 48.2 kilometers of footpaths had been achieved against 20.6 kilometers was targeted as a baseline, and 49.78 kilometers of expanded wastewater network against 48.3 kilometers was targeted, Protect about 9.55 ha agriculture land in Salah UPS and along wadi Osefra (DS) and irrigate 9.6 ha of private land DS of wadi Nafhan as well as protect the high voltage electricity poles situated close to the Wadi edge. Furthermore, more than 2118 meter length with 3.5 meter average height Retaining wall has been constructed in various areas within Taiz city against 1500 Meter length targeted as a baseline.

II. The delivery of this vital infrastructure (flood protection) transformed major parts of the city and has had a substantial impact on the lives and livelihoods of city residents in the affected areas. A dramatic decline was witnessed over the past in the average number of deaths and injuries caused in previous years by seasonal flash flooding. During the project implementation period deaths in the affected areas declined from an annual average of 9 persons at the project's outset to zero in 2010, and no flood-related deaths or injuries were reported in the affected areas since the beginning of 2010. Damages to residences and businesses in the affected areas also witnessed sharp declines during the same period: From a baseline average of 160 residences and 660 businesses experiencing some form of damage or work stoppage/closure due to flash flooding per year, a gradual decline was noted through 2004 with no such damages reported from 2005 to the closing date of project on October 2010. Damages to public infrastructure in affected areas also experienced sharp declines, reducing the annual average costs of repairs from about \$100,000 to zero over the last years before closing date of the last additional financing phase. In addition, the flood structures and complementary wastewater connections helped to improve overall health and sanitary conditions in the city by reducing the flow of wastewater into wadis which had become breeding grounds for malaria-infested mosquitoes.

Under Resettlement Action Program (Component 2):

III. Under the phase-II original project, construction of the flood structures in wadis throughout the city of Taiz where informal settlements and shanties have accumulated over time necessitated a major resettlement program for the "akhdam," who represent the poorest strata of Yemeni society. When the resettlement village opened in 2006 the target of relocating some 177 households was exceeded when 240 beneficiary households were successfully relocated to the site. Appropriate housing design and planning of the village layout and facilities, and a smooth relocation process may be attributed to an effective partnership forged under the project between the city and a dynamic NGO that was responsible for facilitating and monitoring the relocation process in addition to providing training and help in forming a local citizens association. The NGO has subsequently built a training center with funds raised from the private sector for village residents and other unemployed residents in surrounding areas. Such partnerships have had an important demonstration effect in conveying the benefits of joint actions between local government and community-based organizations. Provided all facilities and infrastructures for the settler which include: Multipurpose Awareness Hall (160 sq. m), Health unit (108 sq.m), Administration Building for (NGO) (72 sq. m) and other services

such as Electrical, Sewerage.& Water Supply Networks. As well as Paved village streets with local stone.

Under Capacity Building Component (3):

IV. Under project's capacity building component, important gains have been made in improving local government planning and service delivery. Completion of an updated 20 year master plan at the city level for the first time and development of service delivery and planning tools (data-enhanced GIS) helped to generate a set of priority investments targeting underserved areas of the city.

V. Preparation of a Solid Waste Management Strategy helped to develop new, more effective collection techniques and identified equipment and spare parts needs for the city's cleaning fund to more effectively discharge its responsibilities. A direct result of the strategy was the city's adoption of a direct household collection approach, which will gradually replace the city's containerized collection system. Prior to commencing with the strategy, direct collection represented only 3% of total service coverage, whereas it has since been expanded to 35% coverage of the city. This has had a measurable impact on overall collection effectiveness, raising the pre-strategy level of 3,300 tons per month to more than 9,000 tons per month as of October 2010.

VI. Solid Waste Equipment's: To facilitate the implementation of the SWM strategy and on the bases of SWMS the project was procured solid waste equipment's and upgraded the fleet of solid waste management which currently used in the collection of solid waste within the whole districts of Taiz city.

10.2. Hadramout

XII. The FPERP implemented under TMDFPP Second Additional financing (AF2) has achieved its development objectives by repairing and rehabilitating the affected portion distributed on about 850 KM of Hadramout roads networks through 5 contracts the works includes protection works such as retaining walls, embankments, rib rap, RCC Box Culvert and Irish bridges. the achieved of repaired road found more than the targeted road length which was about 40 KM in addition to 5.2 KM the length of Abdullah Gharib section road.

XIII. The Force Account works implemented under FPERP includes the urgent repairs of segments that cause serious risks to motorists, which from a safety point of view was not advisable to wait for competitive contracting. As per Grant Agreement, The force account works carried out by the General Corporation for Roads and Bridges (GCRB) under retroactive financing based on the existing established unit rates as those used with the Road Maintenance Fund (RMF). The GCRB completed all the works of force account with 92% of work value.

XIV. The project civil works under contracts project involved the implementation of 4 Box Culverts to provide a new road access for citizens to reach their houses during the flood flow.

XV. Construction Supervision Support (TA): Supported the PIU in Hadramout with two construction supervision firms to carry out the Consultancy services for construction supervision works related to all works undertaken under the project (roads and flood protection respectively) and also to carry out any design related to the flood protection sub-component. Under this assignment. The consultants CES and WAPCOS conducted the construction supervision of civil works of RR1,RR2,RR4 and RR5 roads contracts.

XVI. Hadramout Road Maintenance Equipment: Under the capacity building component (Component-3), the necessary road maintenance equipment were provided. The provision of above equipment enabled the Hadramout Local Government to develop its Capacity Building and carry out the road maintenance responsibilities in the governorate.

XVII. Also under capacity building component provided the necessary furniture to Belfaky cultural center and governor office the furniture and equipment provided enhanced the ability of local authority in Hadramout to improve the required services provided to people.

11. Problems encountered during Project Implementation and Measures taken to solve problems and expedite the completion of project

During the period of project implementation, the following main obstacles have been faced:

i) Irregular and unknown paths and levels of old existing underground services such as Water supply, sewage, electricity and telephone cables in addition, the level of some services found close to the ground or asphalt surface led to delay the construction and completion of works under contracts and also increased the cost of contracts value which was as a result of searching , identifying the location of services and sometime due to the need from contractor to replace the damaged services caused by works execution or the need to rehabilitate by re-arranging the underground services upon their own expense.

ii) The unavailability of sewage network, Citizens who live along or adjacent to Wadis bank's discharged their sewage to wadis paths and such status enforced the project to implement a new additional sewage pipe lines and its accessories. This issue were solved by providing a temporarily sewerage network.

iii) Disqualifying of technical staff assigned as representatives to the different services agents (NWSA, Electricity....etc.) to work close with project implementation unit and contractors and to keep up with work and put technical solutions when needed.

iv) Deterioration of existing and old networks (water supply, sewerage) located on some of the tracks within project areas which affects the work progress and the inability of related agents to replace or divert this service to a suitable location not affect work progress. Such this, led the PIU to look for a suitable solution for example the local authority not agree to move by rising or lowering the existing 300 Dia water supply pipe across the 26 Sep.st. The solution of this problem forced the PIU to increase the level of excavation to be 6 meter underground level then lowering the level of box-culvert to a deep distance allow to bass box under the water supply pipe.

v) Lack of capabilities of the local Authority for water supply and sanitation (NWASA) to keep up with the diversion process and renewal of the networks that are contradictory with project structures.

vi) High costs required by the relevant authorities (electricity-telephone-sometimes water) versus conversion services located under the ground surface and implemented in random ways difficult to expect during the project preparation,

vii) The presence of sewage services belonging to the private sector found incompatible with the path of the project structures and hindered the progress of implementation process, particularly in Hawban, Kalaba, and Al Duba Areas) forced the need to be replaced or expanded to improve the performance of its service to the beneficiaries.

viii) Monopoly, materials, maintenance and spare parts of telephone or electric services that are not available in the local market, Caused sometime a significant delay for works which was as a result of long time needed for discussion and acceptance of related agencies to displace or divert the telephone or electric services against reasonable rates need to be paid to related agent.

ix) The prevention of traffic department to contractors to continue the implementation of works as per timetable in some areas, this was due to the narrow streets and absence of enough spaces adjacent to projects to provide the necessary diversion for traffic movement. Such case, forced the contractor to wait until the coming of suitable time when the examination of preliminary and secondary school are completed, or to wait until the second round (one month) in case the need to divert the main pipe of water supply. This case encountered during the implementation of contract 2D along the southern ring road of Taiz City.

x) The phenomenon of throwing solid waste, sewerage, and construction waste to the path way of project structures along wadies (closed and open channels) during implementation

considered the most prominent harassment to work on the project this was due to the lack of health awareness among neighboring populations and unavailability of suitable sites (tips) healthy and environmentally to raise and storing waste excavation or the collection and disposal of garbage.

12. Project Impact

The TMDFP-Original, first (AF1) and second (AF2) addressed the most critical aspects of flood protection and mitigation in the Taiz city and Hadramout Governorate, and ensure the sustainability of the existing works. In particular and reduced the risks from the cutting of regional road network in the intersection points with Wadies in Hadramout as well as reduced the risks of channels blockages from larger boulders and heavy sediments from the upstream catchment of the main wadis in Taiz city. The Phase II, first additional works also improved all the remaining environmental aspects around the works constructed in phase II original and more improvement of areas. In addition, the implementation of FPERP under the second additional financing improved the travel of people without stopping along the regional road networks in Hadramout Governorate by saving about 2 hours days in each trip, also some time the flood flows stop all people movement more than one day, when they want to transfer from area to other. The Project delivery of vital infrastructure (flood protection) transformed major parts of the project areas and has had a substantial impact on the lives and livelihoods of residents in the affected areas in Taiz and Hadramout. For example in Taiz city, a dramatic decline was witnessed over the past in the average number of deaths and injuries caused in previous years by seasonal flash flooding. During the project implementation period deaths in the affected areas declined from an annual average of 9 persons at the project's outset to zero in 2010, and no flood-related deaths or injuries were reported in the affected areas since the beginning of 2010. Damages to residences and businesses in the affected areas also witnessed sharp declines during the same period: From a baseline average of 160 residences and 660 businesses experiencing some form of damage or work stoppage/closure due to flash flooding per year, a gradual decline was noted through 2004 with no such damages reported from 2005 to the project closing date. Damages to public infrastructure in affected areas also experienced sharp declines, reducing the annual average costs of repairs from about \$100,000 to zero over the last years before closing date of the last additional financing phase. In addition, the flood structures and complementary wastewater connections helped to improve overall health and sanitary conditions in the city by reducing the flow of wastewater into Wadies which had become breeding grounds for malaria-infested mosquitoes. In Hadramout, the rehabilitation and repairs of roads increased the road safety and provided smooth traveling as well as decreased vehicles accidents along roads and decreased the vehicles maintenance cost. In other hand, the implemented of box culvert in the intersection of roads with Wadies provides a safe access to people to reach their houses during flood flows.

13. Project Benefits

The Project implementation, improved the living and working conditions on the areas adjacent to the wadis. The project addressed a several and widespread environmental problems. These included the controlling the severe surface run-off along the streets, to provided adequate water supply and sewerage systems, and eliminated the contamination of virtually every neighborhood by discarded solid wastes. The TMDFP implemented under Phase-II Original, first (AF1) and Second (AF2) provided the following principal benefits:

- Improved environmental health throughout a large part of the city.
- Improved social benefits, including better pavements, roads and drainage for surface water.
- Avoidance of disruption of business and other activities during flood periods.
- Prevent the movement of cobbles and boulders further downstream and damage to structures.

- Protection of a number of properties located near the wadis during the flood.
- Provide improved access to residential area located on the wadis side
- Facilitate sewer connection to buildings which are not connected to sewerage system and discharging to wadis.
- Construction of the collector sewer alongside wadis.
- Improving the living and working conditions on the areas adjacent to the wadis.
- Improved street drainage around the implemented works in all wadis. Which includes the Improvement of drainage inlet constructed under the different phases.
- Provided safety ladders for ease escaping from deep open channels during the flood, especially to schoolchildren.
- Reduce local physical dangers from floods and health threats from sewerage.
- Improved institutional capacity of the Ministry of Public Works and local Authority in Taiz and Hadramout.
- Prevent progressive damage to the regional road network surfaces and improved traffic movement during floods without stoping.
- Safe traveling time, fuel used and vehicles maintenance cost. Specially in the long trips in Hdramout govnrorate.
- Reduce the percentage of traffic accidents during travels along the Hadramout regional road network.
- Provide the local citizens in Hadramout with safely access roads to reach their villages during the flood flows. Such as the new access roads constructed in Hadramout to connect the main roads with Al Balad, Al Soiri and Rudud villages to enable citizens reach their homes during flood.
- The technical assistance and goods purchased under capacity building provided strong positive environmental impacts in terms of the studies carried out in Taiz City, including the solid waste management study and its environmental impact.
- Assessment, and the traffic management study in Taiz as well as the TA and the provision of Road Maintenance equipment provided to the local Authority in Hadramaout (Mukala) enhanced its capabilities in carrying out their responsibilities under the decentralization low.

14. Implementation Challenges

The main challenges faced the Projects Implementation was due to mis-coordination, response delayed and due to unrest in the country occurred during the year 2011- 2012 which also caused unsecure situation and accordingly the suspension of disbursement from the World Bank financing Portfolio in Yemen . the challenges indicated down below are as related to fiduciary in general with more focus on the details of financial management and procurement, from the point of view of client represented by project directors, procurement & financial staff.

1. The non-response of officials in Hadramout Governarat to coordinate with the project team at the start of project implementation represent one of challenges has delayed the start of project implementation specially in the field of agriculture.. also to avoid the interference between the project activities with works that were implemented by Hadramout Reconstruction Relief Fund led the client to request IDA to amend the financial agreement to exclude the protection works in Hadramout wadies and to include 7 Km Abdula Gharip section road. This challenge delayed the start of RR5 contract about one year.
2. Delays from the Bank due to changes of four Task Team Leaders (TTL) within a span of 4 years of the project execution period which was as a result of the delay in issuance of No Objections.
3. The Preparation of implementation Program of the project represent a big challenge to Employer or PCU within the project period, this is due to the routine of approval needed to be followed by PCU from the start of bid announcement until the award of contracts in case of civil work and from the issuing of EOI until the award and signing contract

agreement with winner in case of hiring consultancy services firm for carrying out a TA under the financing agreement. For example Annex -5 indicate that, not less than 300 (three hundred) days (in a normal circumstances) actual time were needed to award and sign contract agreement with contractors and almost the same period were needed to hire consultancy services for construction supervision to those contracts (RR1,RR2,RR3 and RR4).

4. One of the main challenges faced the Projects Implementation was due to unrest in the country occurred during the year 2011-2012 which also caused unsecure situation and accordingly the suspension of disbursement from the World Bank financing Portfolio in Yemen . the challenges indicated down below are as related to fiduciary in general with more focus on the details of financial management and procurement, from the point of view of project directors, procurement & financial staff.
5. The suspension of disbursements affect the ability of client for payments to contractors which in turn slow down the pace of implementation.
6. Implementation progress of the ongoing sub-projects (four main roads rehabilitation contracts in Hadramout) was slowed down when the unrest started in the country in mid February 2011 and stopped totally for more than one year ended April 2012.
7. The unrest has affected contractors' mobility due unavailability of fuel.
8. Contractors and consultants supervising the construction works left the project sites due to inability of client to pay their dues.
9. Complexity of procurement methods hinders swift disbursement from Grants.
10. Security Procedures followed by WB since the start of unrest up to date delays the swift Bank clearance or approval of Procurements. This affect negatively on project implementation.
11. Inadequate or absent of WB follow-up and monitoring, reviews and evaluation to project affect negatively on the response of WB to the request of client for issuing the different issues related to procurements.
12. The Banks' Disbursement suspension since July 2011 up to more than one year period affect the fiduciary activities in the project implementation.

15. Project Sustainability

To ensure project sustainability the following measures has been taken for the operation and maintenance of key infrastructure assets developed under the Project, to include all flood structures, local council buildings, the flood structure equipment hanger, and the Al-Amirah Dam structures:

1. To ensure sustainability of the flood structure and the effective use of the maintenance equipment, the Governor of Taiz has issued a decree No: 3 for the year 2007 by establishing a Maintenance unit for TMDFP structures followed the Cleaning and Development office within Taiz Governorate. Also, an amount of YR 25 million has been allocated for yearly O&M. Furthermore, All the flood structure maintenance equipment procured by the project transferred to this new department.
2. Handed over Al Amira Dam to the local council office in the area. Now the Local council office supported by Ministry of Agriculture currently carrying out the responsibility of operation and maintenance of the Dam.
3. In yearly bases, Adequate O&M cost budgeting has been put in place by Taiz and IBB Governors for effective operation and maintenance of each of the 9 local council buildings (LCBs) in taiz Governorate and 6 local council buildings (LCBs) in IBB Governorate respectively.
4. Also, a public awareness campaign was organized and consisted of 30 school education sessions reaching about 2,400 students and teachers. Additionally, the campaign posted signs throughout the City informing the public about the hazards of throwing garbage in the flood structures.

5. Also road maintenance equipment have been purchased under the project (FPERP) and handed over to the local Public office in Hadramout who will take the responsibility of road maintenance in future.
6. Also, the rehabilitated and repaired roads under the FPERP currently handed over to the local Public Work Office in Hadramout Governorate who will take the responsibility of maintenance. Also, a routine maintenance will be carried out by the Road Maintenance Fund sponsored the Ministry of Public Works & Highways.

16. Key Lessons Learned

The following paragraph indicate the lessons have been learned during the project implementation:

1. It was Observed that, during the implementation period of TMDFPF Original and TMDFPF under the first additional financing (AF1) that, the good relationship and coordination between the TTL assigned by IDA and client represented by project implementation unit (PIUs) as well as with local authorities in Taiz Governorate led to the success of the project in achieving its development objectives and its achievements exceeded what has been targeted in the Financing Agreement.
2. Change more than three Task Team Leader (TTL) by IDA within 4 years to follow-up the implementation of emergency project (FPERP) under second additional financing (AF2) was one of the main reasons that contributed to the delay in obtaining IDA approvals and therefore the delay in ending the project works on time in accordance with the financing agreement.
3. Misunderstanding of MoA and its Local office in Hadramout Governorate as beneficiaries from project implementation and as a result the failure of IDA and PCU to coordinate with those agencies delayed the start of some sub-project implementation more than one i.e. until the IDA consent to modify the financing agreement and to cancel the sub-component of wadies protection in Hadramout and also to include the implementation of Abdulla Gharib Section road. So, we have learned that, it is very important from IDA as a financing agency to insure that, each entity know its role with regard to project implementation before approval of financing effectiveness.
4. The need for the Yemeni Government and the International Development Association (IDA) to reach an agreement limiting the parties who have the authority for ratification of project activities implemented under Loans or Grants. In this view, it was observed that, it is very difficult for PCU to prepare a practical action plan to any activity during the period started on the date of announcement for bidders until the award and signing contract agreement with winners or during the period started from the date of EOI until the signing of consultancy services agreement because in both cases, the time needed for ratifications found not less than one year.
More details please refer to Annex-3 prepared by PCU for contracts (RR1, RR2,RR3 and RR4) and for the assignment of construction supervision consultants which indicate that, about one year the actual time taken to finalize the preparation stage and start activity implementation. Accordingly this observation need from IDA and Client to give more attention to this issue. Otherwise the ability of client to utilize loans and Grants will be limited.
5. Lack of coordination between PCU and RMSI Consultant who carried out a lot of studies in Hadramout under the direct agreements sponsored by IDA only. To avoid interference and in coordination with TTL Consultancy services to develop a flood protection plan for the critically damaged and vulnerable areas of Wadi Hadramout have been canceled and the allocated amount for caring out this activity have been lost. So, coordination is very important for identifying the proper studies within any project in future.

17. Environmental and Social Safeguards

1. The project of TMDFPF classified as category 'B and all construction works in Taiz focused on the construction of open and closed channels, Box-Culvert, stone and asphalt pavement, sewerage.....etc. along main wadies and its branches and streets inside the

city of Taiz and in Hadramout focused on the repair, rehabilitation, reconstruction and upgrading of damaged roads located mostly along wadi crossings as well as alongside wadies in non-urban areas, Local Environment Officers have been hired to work with PIUs to monitor the environment aspects and its compliance with WB regular laws and must be followed by Borrowers.

2. In Taiz: Environmental monitoring matrices were used during the construction of TMDFPF Original and first additional financing AF1 (civil works) since the start of TMDFPF until the closing date on 31 October 2010. appropriate measures were used to minimize dust and noise pollution arising from their plants until the completion of all civil works included within contracts.. All comments and notes had been carried out as recommended by Mr. J.B Collier during his sequence visits with WB Mission to project site.
3. In Hadramout: The local Environment officer assigned to work with PIUs based in Syoun in Hadramout Governorate conducted frequent visits to each of Road Contract (RR1-RR5). The site visits for monitoring environment was to ensure that, all project contract implemented in compliance with environment safeguards involved in EMS and contracts document,. Monthly meetings were held with each of the Contractors representatives and consultant's representative to ensure that, the construction works are in compliance with various et may appear from time to time in the Environment and Social safeguards officer. Since the start of construction until the substantial completion of all contracts of TMDFPF Original, First AF1 and second AF2, the following main mitigation measures have been taken:
 - Ensure site and stockpiles of materials are properly secured;
 - Ensure proper un-loading/storage of Construction materials;
 - On-site mixing of materials in enclosed or shielded areas;
 - Keep access routes free of dust and regularly cleaned;
 - Minimum traffic speed enforced on site and for bypass;
 - Proper and regular maintenance and repair of construction machinery;
 - Ensure proper drainage from site;
 - Stopping the sewerage water flow to construction area;
 - Ensure proper transport, handling and disposal of surplus materials and wastes;.
 - Road blockage during peak use hours;
 - Ensure construction crew is well briefed on placement of other existing services;
 - Close supervision of work in area around other existing services;
 - Develop general health and safety plans based on international standard and local/ national regulations or guidelines;.
 - Health Check-ups of the workers by using of safety devices such as helmets;, safety shoes, hand gloves, and safety goggles;
 - Construct and maintain bypasses;
 - Conducts as much work as possible during low traffic periods to ensure access to home and businesses.