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**EXECUTIVE SUMMARY**

**❝ SIHANOUKVILLE FOR ALL:**
**Promoting Smart, Sustainable, and Inclusive city ❞**

**October 2021**

## Credits

# PREFACE

A shared understanding and a common vision for a smart, sustainable and inclusive city concept for Sihanoukville is one of the outcomes from the project "Sihanoukville for all: Promoting Smart, Sustainable, and Inclusive city." Through participatory consultations initiated in November 2019 between the United Nations Country Team and H.E Kuoch Chamroeun, Governor of Preah Sihanouk Province, a wide range of issues on urbanization, economic growth and inclusive development were discussed. With the rapid development in this coastal province, stakeholders agreed that dedicated attention must be given to how the city and the province can develop in a smart, sustainable and inclusive way.

Our joint aspiration for the implementation of the smart city concept in Sihanoukville is grounded on the 2030 Agenda for Sustainable Development and the achievement of the SDGs. While Sustainable Development Goal 11: "make cities and human settlements inclusive, safe, resilient and sustainable" is the most directly related to the concept of a smart city; other goals and targets related to poverty (SDG 1), hunger (SDG 2), health (SDG 3), gender equality (SDG 5), inequality (SDG 10), water (SDG 6 & 14), climate change (SDG 13) and land (SDG 15), must also be integrated in the smart city framework. Linking the smart city project to the SDGs alone is also not enough. The simple fact is that no city can be considered 'smart' if it ignores the interests of poor, marginalized and vulnerable groups and communities.

To be a real smart city, Sihanoukville must conform to city master plans and incorporate international standards and guidelines related to housing, sustainable development, environmental protection, disaster prepardness, forced evictions and displacement. It means adopting an inclusive and sustainable approach to development; ensuring the right to participation and information, such as the representation of city residents in monitoring mechanisms; promoting gender equality; and respecting human rights, particularly those related to land and housing for everyone. A smart, sustainable and inclusive city integrates a human security approach, a program framework that addresses Sihanoukville and its people's needs.

With support from UN Human Security Trust Fund, the UN Country Team in Cambodia worked closely with the people in Sihanoukville to identify their needs, and based on their priorities, advanced policies and jointly took actions. We believe that together with diverse stakeholders, and with human security approach to development in Sihanouville, we can make a concrete different in people's lives. Our commitment is to ensure that collectively we addresss social exclusion and reduce poverty. With this commitment, we can jointly strengthen the connection between peace and security, development and human rights, all of which accelerates the drive towards a smart, sustainable and inclusive Sihanoukville.

On behalf of the UN country team, I sincerely thank the Sihanoukville Smart City Working Group, provincial government, city authorities and all the local stakeholders who have participated and provided valuable contributions in the process to co-design the smart, sustainable and inclusive city concept for Sihanoukville. We will sustain joint efforts to implement our shared vision.

**Pauline Tamesis**

Resident Coordinator
United Nations in Cambodia

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# 1. INTRODUCTION

The "Sustainable Inclusive Smart City Concept" has evolved as a result of the project "Sihanoukville for All: promoting a Smart Sustainable and Inclusive City" promoted by the UNCT - Cambodia and led by OHCHR and UN-Habitat funded by UN Trust Fund for Human Security. The project conducted a comprehensive assessment to launch Sihanoukville as a smart sustainable and inclusive city, by following the Human Security methodology and embedding UN-Habitat's global Flagship philosophy "People Focused Smart Cities".

The "Sustainable Inclusive Smart City Concept" has been conceived through a people-focused, gender-based approach and a human rights lens. It strives to contribute to achieving the SDGs, and the New Urban Agenda with a sound focus on concrete smart opportunities to involve marginalized and vulnerable groups and communities in the digitalization process because "no city can truly be considered "smart" if it ignores the interests of the poor" as said by Pauline Tamesis, Resident Coordinator at United Nations in Cambodia during the meeting with the working group in Sihanoukville held on 23rd February 2021.

The "Sustainable Inclusive Smart City Concept" emerged from the analysis of existing development gaps, the emerging urban challenges, the policy framework and lesson learned from global smart cities case studies. Desk research, interviews, consultations with local stakeholders and above all the recommendations highlighted by the Human Security assessment have shaped the 13 sustainable, inclusive, smart initiatives which compose the Concept.

# 2. READINESS FOR THE DEVELOPMENT OF THE SUSTAINABLE INCLUSIVE SMART CITY CONCEPT

## 2.1 Local stakeholder's perspective on Smart, Sustainable and Inclusive City

Under the "Sihanoukville for All" project, the Sihanoukville Smart City) Working Group composed of Local Authorities at Municipal and Provincial Level, Local NGOs, Private bodies, CSOs and UN agencies was established. This working group engaged in a process of identifying smart city concept inputs for Sihanoukville through different approaches, including consultation meetings and interviews.

Two inclusive consultation meetings, and rolling stakeholder interview sessions were organized to collected information regarding the current development gaps as well as their perspectives on the "Smart, Sustainable, and Inclusive Sihanoukville" from local stakeholders. The following summarizes the views expressed :

A shared Vision for the Smart, Sustainable, and Inclusive Sihanoukville in that

*"Smart Sihanoukville city is an environmentally friendly city, operating as a multipurpose economic zone and an Asian financial center, and a place where everyone wants to live."*

*"Smart Sihanoukville city is the city that offers living conditions that meet the need of its citizen with a sustainable environment, public security and safety, uses digital systems and technologies to foster a multi-purpose economy and governance*

*efficiency to promote harmony and well-being of the people."*

***Key issues shared by participants to be addressed by the Smart City Concept through the initiatives***

- the need to set up a permanent e-governance and participatory framework to involve citizens and local communities both in urban and rural settlements;

- the wish to have a permanent programme of computer literacy and the involvement of the educational sector in the digital transition;

- the need to improve the environmental issues and tackle relevant challenges such as the waste collection and urban flooding;

***Priorities initiatives for Smart, Sustainable, and Inclusive Sihanoukville***

Local authorities and all stakeholders during the workshop organized in June and September 2021 expressed as priorities for the Smart City Concept the following initiatives to be focused on (1) smart youth centers, (2) permanent programs of computer and technology literacy for citizens, (3) improvement of solid waste and wastewater management in the city, (4) smart health care, and (5) public security and safety. Furthermore, it was underlined that without appropriate capacity development programmes targeted at public entities and citizens to promote smart citizens, the city could not be expected to be transformed in a sustainable, inclusive smart city.

## 2.2 State of Human Security in 'Sihanoukville' Based on the United Nations Human Security Framework

A human security assessment was conducted by the Asian Research Institute on Environmental Law (ARIEL), as consultants to OHCHR in Cambodia, and were the lead partner of the "Sihanoukville for all" project. The assessment was guided by the United Nations Human Security Framework[1], which defines seven types of human securities, such as (1) Economic security, (2) Food security, (3) Health security, (4) Environmental security, (5) Personal security, (6) Community-level security, and (7) Fairness of institutions.

Building on this current state of human securities and the framework for the "Sihanoukville for All project", Ten Strategic Recommendations were identified for the smart, sustainable, and inclusive Sihanoukville model. These strategic recommendations aim to establish the very essence of "smartness" along with sustainability and inclusiveness that fulfil the requirement for promoting Smart, Sustainable and Inclusive Sihanoukville:

1. Reinforce a higher autonomy of decision-making at local levels and a higher degree of participation of residents in the local policy making process.

2. Enhance citizen-government dialogues, including through adequate digital participation platforms and effective grievance/redress mechanisms.

3. Improve awareness about laws, rights, and the obligations set out by the laws.

4. Achieve higher environmental sustainability and life quality standards.

5. Achieve more effective climate change practices and preparedness.

6. Foster a business ecosystem that is conducive to entrepreneurship and economic diversification.

7. Reclaim sustainability through improved food autonomy.

8. Provide residents with adequate healthcare services.

9. Provide all residents with adequate food security and nutrition.

10. Provide all residents with improved safety and security.

## 2.3 Lesson Learned from Global Smart City Case Studies

In parallel with the consultations, a collection of Global Case Studies elaborating lessons learnt and to bring inspiration from other cities already promoting smart city approaches. Interviews and desks research allowed to elaborate a report so called "Succinct Lesson Learned on Case Studies People focused Smart City", aimed at exploring shared concepts of people centered smart cities and providing lessons learned from other cities applied the smart inclusive cities approach. The report allowed to share a roadmap for guiding the data collection and site-specific information to be used for the smart city concept for the Sustainable, Inclusive Smart City Concept for Sihanoukville.

The case studies applied a human right lens in their analysis and the collection process of smart city case studies ensuring an embedding of the vision of the new smart city concept for Sihanoukville with the overall principle "Leaving no one behind". The inclusion of women and girls and the most marginalized people for the smart city design has been the principle of this work to foster the participation of every citizens and the engagement of the local population with a special attention to vulnerable and underprivileged

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[1]  https://www.un.org/humansecurity/wp-content/uploads/2017/10/h2.pdf

# Figure 1: Factors pertaining to human securities challenges facing by Sihanoukville residents

**Environmental insecurity**

- Limited coverage of health services for certain medical condition with requires resident to travel to Phnom Penh capital
- Worst degree of health service in the prison and detention center)
- IDPoor cardholder tend to be subject to undue discrimination and receive unequal service levels

**Health insecurity**

- Uncontrolled inflation of food prices and diminution of income (particularly vulnerable groups)
- Insufficient local food supply production directly link the surge of land prices
- sensitivity to contingency factors (increases in freight and logistic prices), aggravated by covid 19 pandemic
- High dependency on import

**Food insecurity**

- Adverse business conditions experience by small/ micro businesses
- Uncontrolled inflation of rental for office/home premise
- Situation of underdeveloped human capital
- Insufficiency of local food production and supply chains
- Insufficient or uneven internet service levels

**Economic insecurity**

- Inability to meet essential livelihood needs for some portion of population
- Uncontrolled inflation of food prices
- Heightened employment volatility
- Vulnerability of essential assets, especially real estate assets
- Markets in structural condition of inefficient

## Human Security Challenges

**Environ-mental insecurity** | **Health insecurity** | **Trust in institution** | **Food insecurity** | **Community insecurity** | **Economic insecurity** | **Personal insecurity**

**Environmental insecurity**

- Accumulation of solid waste in urban areas due inadequate & insufficient trash collection services, limited awareness on good practices,
- Inadequate enforcement of environmental policies
- Hazard due to urban flooding resulting from ineffective rainwater drainage infrastructure
- Soil pollution due uncontrolled dumping of industrial waste, inadequate practices by construction sites
- Uncontrolled disruption of ecosystem links to rapid urbanization

**Trust in institution**

- Rise of land-related disputes.
- The fear of entailing intimidation or retaliation.
- The experience of judicial decisions perceived as unfair by proponents.
- The fear to express their thoughts freely in public.
- Lack of adequate grievance mechanisms- lack of "interactional justice"

**Community insecurity**

- Exposure to child labour and other forms of personal insecurity affecting children, leading to malnutrition, loss of attention at school, exposure to violence and drugs
- Uneven coverage of urban services
- Drug trafficking and related crimes at a community level (increase in the crime level in their community, giving rise to robberies and shootings)
- Road safety lack of road signs, lack of discipline of drivers or lack of education of drivers.
- Children exposed to a diversity of risks & hazard while being left unsupervised

**Personal insecurity**

- Exposure to child labour and other forms of personal insecurity affecting children, leading to malnutrition, loss of attention at school, exposure to violence and drugs
- Exposure to gangsterism and crimes (Risk of rape and sexual violence, exposure to domestic violence).
- Exposure to retaliation or intimidation due to land rightsrelated disputes, conflicts with higher-ranking people, or conflicts between activists and local authorities.
- Exposure to modern forms of prostitution affecting young adults- young adults can be attracted by casinos, massage parlors & similar businesses by regarding those as an opportunity to change or upgrade their lifestyle; often leading to modern forms of prostitution.

groups of people living in Sihanoukville.

The collection of lessons learned – good practices - on sustainable, inclusive and smart cities has been grouped in three themes, which inspired the design of the three pillars for the smart, sustainable, and inclusive city concept That are:
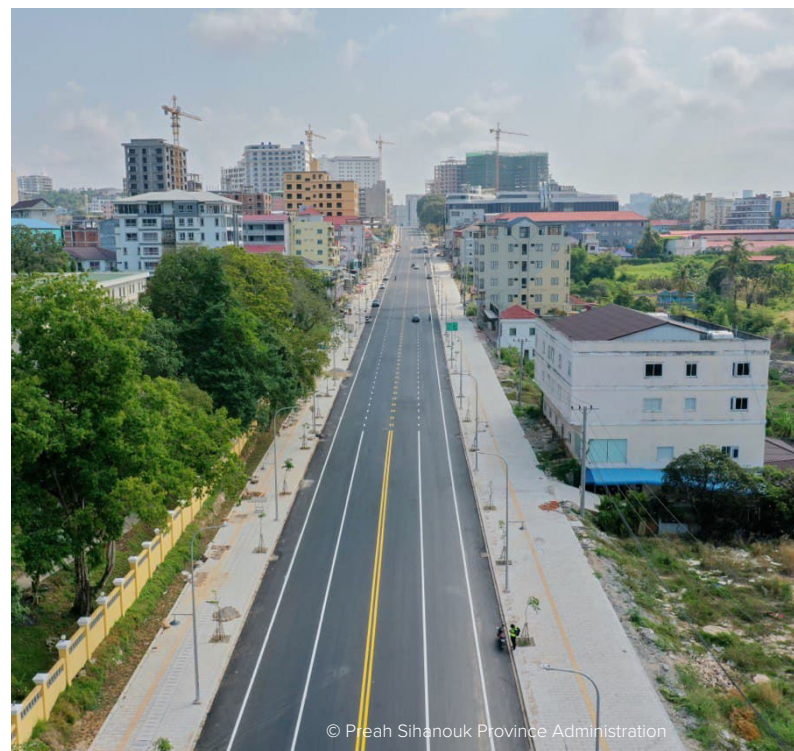
- *Innovative digital approaches of civic participation (analyzed experiences of Bologna and Barcelona);*

- *Data collection for improving city services and facilities through a crowdsourced approach such as the public transportation, safety in public spaces for women and girls, the urban upgrading and the environment issues management (analyzed experiences of Nairobi, Delhi, Jakarta and Beijing);*

- *Reducing the digital divides providing tailored methodology of digital inclusion (analyzed experiences of Seoul and Johannesburg).*

## 2.4 Capitalization and upscaling of the existing digital tools developed by UN-Habitat

The "Sustainable Inclusive Smart City Concept" has up-scaled some of the existing digital tools developed by UN-Habitat with the purpose of boosting collaboration with other territories and providing some examples for innovation of the implementation in Sihanoukville based on the experiences in other cities.

Among others:

- the **Block by Block**[2] initiative aimed at improving the participation of local communities by co-designing urban areas to be upgraded and regenerated through a game approach using the video game "Minecraft" simply described as "virtual LEGO".

- **Her city toolbox**[3], a digital play-based platform to re-think and plan the city through a gender sensitive lens

- **Social Tenure Domain Model**[4], a pro-poor land tool aimed at supporting local communities and individuals in the development of land management tools to address the technical gaps associated with unregistered land, the upgrading of slums and informal settlements and urban and rural management


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2    https://www.blockbyblock.org/
3    https://hercity.unhabitat.org/
4    https://stdm.gltn.net/

# 3. SMART, SUSTAINABLE AND INCLUSIVE CITY CONCEPT FOR SIHANOUKVILLE

## 3.1 Scope and guiding principles

The Sustainable Inclusive Smart City Concept has been conceived based on the Sustainable Development Agenda 2030 and the Sustainable Development Goals (SDGs), directly connected to the SDG 11 on sustainable cities and communities and on other goals and targets related to hunger, poverty, inequality, health, gender equality, land, water, and climate change.

The scope of the Concept is to foster a strongly participative dimension in Sihanoukville by creating a novel alliance between citizens and the local authorities through smart city approaches. The concept is to provide better city planning and maintenance, services, facilities and infrastructures, aimed at including the most marginalized people to ensure health, clean air and water, waste management, safety and equal opportunities.

Three approaches have been followed to draft this Concept to foster the implementation of an Innovative Smart City Idea where the overarching guiding principle is "Leaving no one behind":

1.  The **People-Centered Smart City approach**: It positions people's needs in the heart of the smart city strategy focusing on people and not on the technology itself, because it is not sufficient to provide the needed innovation. This is aimed at boosting citizens' engagement through innovative citizen laboratories and civic platforms, providing new e-services for supporting the transportation system, housing provision, waste collection, food production

and delivery and much more.

2.  The **Human Rights lens for a smart city**. This is aimed at addressing the smart city initiatives to include the most marginalized groups of Sihanoukville and ensure that none will be excluded by the innovative digital process. This allows the design all smart city initiatives through a human rights lens to ensure the local population live in an equal, just and dignified society benefiting from the digital transition.

3.  The focus on **Girls and Women for the Smart City**. It aims at fostering a sound inclusion of women and girls in the civic and democratic life embracing the philosophy "if we plan a city for girls, it will work for everyone", promoted by the #UrbanGirlsMovement think Tank, to overcome the gender gap in connectivity and equal opportunities in a digitalized world. This approach aims to change the city planning approach, by focusing on the needs of women and girls by including them better in decision-making processes, to promote adequate public health and sanitation, access to education and employment, face climate change and ensure social and urban security.

## 3.2 Definition of Smart, Sustainable and Inclusive City Concept for Sihanoukville

Considering the overall considerations of dealing with people-focused smart city, women focused and human rights respect and the

wishes expressed by the local working group, the following definition for "Sustainable Inclusive Smart City in Sihanoukville" was developed:

*(A) "Smart city is the city that fosters a novel alliance between its citizens and local authorities, meeting citizens' needs, and fostering human rights respect. It provides better city planning and maintenance, services (provision), facilities and infrastructures aimed at promoting inclusiveness, justice, equity, a sustainable environment, public security and safety. It uses digital systems and technology to foster the governance efficiency and a multi-purpose inclusive and sustainable economy to promote harmony and well-being for all people. It focuses attention on the most marginalized peoples, with the purpose of leaving no one behind, including girls and women in the digital transition process to ensure education, participation, health, clean air and water, land tenure and housing, sustainable mobility systems, waste management, safety and equal opportunities for all citizens".*

## 3.3 Sihanoukville for all: Smart, Sustainable, and Inclusive City Action Plan

The Smart, Sustainable and Inclusive city Action Plan aims to address a series of issues by applying smart initiatives positioned people in the heart of the smart city vision. It provides special attention for marginalized groups, women and girls in order to enhance the overall citizen and community participation, foster e-governance, improve local services and facilities through crowdsourced activities and reduce the digital divide and the gender gap.

To realize this, the 'Sustainable Inclusive and Smart city Action Plan' was designed to cover three pillars, with supporting initiatives identified under each pillar.

## 3.3.1 Pillar 1:

## People-focused Smart Planning & e-governance through Innovative Digital Participation

The strategy under this pillar aims at providing a concrete answer to the corresponding human security strategic recommendations related to smart engagement of local communities by involving citizens to participate in the decision-making processes through a sound inclusion of girls and women, in the e-participatory framework for re-thinking the city functioning, through virtual and physical participative modes. It will be focused on transparent and equal e-governance system which allows citizens to obtain information and be included in the city life.

Four initiatives aimed at promoting Smart Engagement were identified to support this pillar, namely:

- *Initiative 1.1.* Smart Sihanoukville Platform for e-participation,
- *Initiative 1.2.* E-Governance platform for citizens,
- *Initiative 1.3.* Smart neighborhood centers
- *Initiative 1.4.* Playful smart urban planning for youth

## 3.3.2 Pillar 2:

## Smart services through crowdsourced data and information

This pillar covers a strategy that aims at collecting useful data and information to re-design citizens services, especially focused on women and marginalized groups of people, It advocates a collaborative approach which directly involve

local communities and people. It focused on the corresponding human security strategic recommendations dealing with Sustainability and Inclusiveness.

Seven initiatives are promoted under this pillar namely:

- **Initiative 2.1.** *Digital crowdsourced mapping on environmental issues (waste management, water, flooding),*

- **Initiative 2.2.** *Smart solutions for urban mobility*

- **Initiative 2.3.** *Smart agriculture and food*

- **Initiative 2.4.** *Smart Solution for Housing and Land tenure Labs*

- **Initiative 2.5.** *Safer city*

- **Initiative 2.6.** *Health care for community*

- **Initiative 2.7**. *Smart inclusive economic system*

## Digital empowerment to reduce the digital divide and foster human rights

The strategy of this pillar aims at ensuring human rights and human security framework by providing equal opportunities to benefit from the digital transformation. It promotes an adequate education system and a capacity building framework to enhance the citizens' skills to use the technology. The initiatives under pillar 3 are linked to the corresponding human security strategic recommendation related to Inclusiveness.

The following initiatives are to be promoted under this pillar, namely:

- **Initiative 3.1.** *Accessible free internet zones in strategical urban and rural areas, especially addressed to poor and marginalized people.*

- **Initiative 3.2.** *Permanent programme of computer/technology literacy for citizens through "Digital City Ambassadors"*

## 3.4 Human Security Strategic Recommendations addressing the Sustainable, Inclusive, Smart City Framework for Sihanoukville

| Pillars of the Smart, Sustainable, and Inclusive SHV | Initiatives / Actions Plan to be promoted | Corresponding human securities strategic recommendations |
|---|---|---|
| **Pillar 1:** People-focused Smart Planning & e-governance through Innovative digital Participation | **Initiative 1.1**. Smart Sihanoukville Platform for e-participation<br><br>**Initiative 1.2.** E-Governance platform for citizens<br><br>**Initiative 1.3.** Smart neighborhood centers<br><br>**Initiative 1.4.** Playful smart urban planning for youth | **Promoting "Smart Engagement"**<br><br>1. Reinforce a higher autonomy of decision-making at the local level and a higher degree of participation of residents in the local policymaking process.<br><br>2. Enhance citizen-government dialogue, including through adequate digital participation platforms and effective grievance/redress mechanisms.<br><br>3. Improve awareness about laws, rights, and obligations set-out in the laws. |

| Pillars of the Smart, Sustainable, and Inclusive SHV | Initiatives / Actions Plan to be promoted | Corresponding human securities strategic recommendations |
|---|---|---|
| **Pillar 2:** Smart services through crowdsourced data and information | **Initiative 2.1.** Digital crowdsourced resources maps on environmental issues (waste management, water, flooding)<br><br>**Initiative 2.2.** Smart solutions for urban mobility<br><br>**Initiative 2.3.** Smart agriculture and food<br><br>**Initiative 2.4.** Smart Solution for Housing and Land tenure<br><br>**Initiative 2.5.** Safer city<br><br>**Initiative 2.6.** Health care for community<br><br>**Initiative 2.7.** Smart inclusive economic system | **Promoting "Sustainability and inclusiveness"**<br><br>4.  Achieve higher environmental sustainability and life quality standards.<br><br>5.  Achieve more effective climate change practices and preparedness.<br><br>6.  Foster a business ecosystem that is conducive to entrepreneurship and economic diversification.<br><br>7.  Reclaim sustainability through improved food autonomy.<br><br>8.  Provide residents with adequate healthcare services.<br><br>9.  Provide all residents with adequate food security and nutrition.<br><br>10. Provide all residents with improved safety and security. |
| **Pillar 3:** Digital empowerment to reduce the digital divide and foster human rights | **Initiative 3.1.** Accessible free internet zones in strategical urban and rural areas, especially addressed to poor and marginalized people<br><br>**Initiative 3.2.** Permanent programme of computer/ technology literacy for citizens trough the "Digital City Ambassadors" | **Promoting "Inclusiveness"**<br><br>11. Build media/information/data literacy among all social groups<br><br>12. Build the capacity of residents to report information on issues and concerns their community<br><br>13. Enable internet connectivity throughout Sihanoukville City on a inclusive basis<br><br>14. Inclusion in the sense of equal treatment and gender |

# 4. THE 13 SMART SUSTAINABLE AND INCLUSIVE INITIATIVES FOR SIHANOUKVILLE

The 13 smart, sustainable and inclusive initiatives have been aligned with the human security principles that are people-focused, comprehensive, context-specific, and prevention-oriented while addressing the 10 strategic human security recommendations aiming at promoting inclusiveness, sustainability and smart engagement. The strategic implementation of each initiative entails mechanisms to foster protection and trigger the empowerment of citizens and local communities, with a special attention to the most unprivileged people.

The initiatives have been conceived to boost a new alliance between citizens and Local Authorities and putting into practice the people-focused smart city approach through a human rights lens, by promoting the inclusion of girls, women, youth and the marginalized poeple in the implementation of all the initiatives.

Indeed, each initiative has been set up embedding the three (3) guiding principles explained in the section 3.1 and concretely organizing the initiative as follow:

- putting people in the heart of the smart city mechanism and providing digital tools to tackle specific challenges (People-focused principle)
- developing blended approaches to involve all the people and provide tailored activities for marginalized communities and vulnerable people (Human Rights principle)
- Foreseeing a dedicated participative space both virtually and physically for women and girls to facilitate the process of inclusion (Focus on girls and women for Smart City).

## 4.1 Initiative 1.1.

## Smart Sihanoukville Platform for e-participation

A Digital Participative Platform for "e-participation" will be realized to trigger the civic participation and the engagement of local population on important development aspects in Sihanoukville.

There will be 2 channels of participation forecasted in the platform:

1. *Proposals from the Municipality and Local Institutions (Top-down approach). The Public institutions will launch calls for participation to listen from local population their needs, wishes and insights. Relevant topics will be putted in the spotlight and citizens could contribute and prioritize the most relevant.*

2. *Act for change together (Bottom up approach)! Every citizen, representatives of local communities or CBOs/NGOs can propose an issue to discuss. The Local Authorities will evaluate those issues and if considered relevant, an open participative call (top-down approach) will be launched to collect insights and information.*

The **digital involvement** will be combined with physical **meetings** where stakeholders and citizens will be invited to attend.

A dedicated space for women and girls will be opened into the e-participation platform to collect needs and suggestions from their perspective and ensure a safe and free space for communication.

## 4.2 Initiative 1.2.

## E-Governance platform for citizens

An "E-Governance" platform will be set up whereby the local population will be able to consult and find information related to land tenure procedures, housing search, education facilities, family cards, health services, waste recollection, economic local offers, urban-rural mobility etc.

The E-Governance platform will be the main webpage used by the local administration to boost the Sustainable Inclusive Smart City for Sihanoukville.

The Digital Participative Platform for "e-participation" (initiative 1.1) and the other smart initiatives will be promoted using this web portal.

An "innovation unit" within the Municipality, with a dedicated staff, should be appointed to manage the online-services and respond to the citizens requests.

The e-governance activities will be promoted by an online campaign and physical meetings. The physical meetings will be organized in the deprived neighborhoods to support poor people and marginalized communities to learn how to use the e-services. These meetings will be conceived as participatory activities to boost vulnerable people to call for their rights and enhance their living conditions.

## 4.3 Initiative 1.3.

## Smart neighborhood centers

A Living Lab methodology will be promoted in several neighborhoods of Sihanoukville addressed to local communities, that will be involved by the local administration to share problems and possible solutions on emergencies and urban issues. The Smart neighborhood center, will boost the civic participation at neighborhood level, becoming a space for discussing problems and challenges of the neighborhood and sharing ideas and insights to be submitted at the Local Authorities through the "E-Participation" (Initiative 1.1).

A dedicated woman/girls focused in the selected neighborhoods will be set up to listen to women and girls voices and co-design gender sensitive solutions to guarantee equal access to city services and facilities.

A team of facilitators/mediators should be appointed to support local communities in the co-design process for shaping collaborative and shared ideas about new services and facilities for citizens or initiatives to better address the local challenges citizens daily live.

## 4.4 Initiative 1.4.

## Playful smart urban planning for youth

Young people will be involved into an experimental digital playful process to re-shape the city and re-define the urban planning activity. The approach will be based on a participatory dimension developed by using play and games to reinvent the city and experiment innovations in urban public spaces.

A participatory process will be set up in connection with the Sihanoukville the Smart Neighborhood Centers (initiative 1.3) and the E-Participation platform (initiative 1.1) to collect needs, wishes and insights to better address the urban planning activity in Sihanoukville.

A digital laboratory will be set up and young people will be invited to experiment the urban changes by a virtual game reality, through the "Block by

Block[5]" approach which uses videogames such as Minecraft to re-shape urban and rural areas. UN-Habitat has already experimented the Block by block initiative to co-design urban areas in several Countries and Sihanoukville could benefit from this experience.

Recently UN-Habitat launched "Her city toolbox[6]"", a digital play-based platform to re-think and plan the city through a gender sensitive lens. This approach should be used also in Sihanoukville to engage girls and women for the tailored laboratories addressed to girls to listen their ideas dealing with urban public spaces, WASH facilities, transportation and safety.

## 4.5 Initiative 2.1.

## Digital crowdsourced maps on environmental issues (waste management, water, flooding)

A crowdsourced map will be created to identify environmental emergencies in Sihanoukville especially addressed to suburbs, slums and other informal areas, in order to support an adequate respond from the Local Authority in the urban maintenance and environmental management and promote bottom-up initiatives of co-management at community level.

The data collection through an ICT system is more effective than a traditional data collection for environmental management. Local population will interact with that, providing live data especially dealing with flooding and/or waste management. The crowdsourced data will be immediately inserted in an online map to be consulted by all people looking for instant information.

A virtual space for co-creation dealing with environment, agriculture, food and health will be set up inside the Smart Neighborhood Centers (Initiative 1.3). Women, girls and other vulnerable groups of people will be encouraged to participate to propose collaborative ideas to promote local activities/services/actions.

The crowdsourced map will be embedded into the E-Governance platform (Initiative 1.2).

## 4.6 Initiative 2.2.

## Smart solutions for urban mobility

In Sihanoukville the public transportation is insufficient and completely lack in some areas. Private transportation and informal mobility services try to answer to the connection needs of local population.

An online crowdsourced map application, linked to common online digital tools such as Google map, will be created where collecting all the transportation offers coming from the private and the informal sector.

Carpooling systems will be incentivized by creating an online community of commuters by using the tools of the E-Participation Platform (Initiative 1.1).

Physical Mobility meetings will be organized to listen the needs and the main routes of citizens, by engaging people through the Smart Neighborhood Centers methodology described in the initiative 1.3. This data could also be used to measure access to health facilities (initiative 2.6) and green spaces as well as to measure the proportion of the population with access to public transportation or other services.

A focus group for girls and women needs to safety move in the city will be organized through a blended formula of physical and online meetings. Carpooling systems and private-public transportation offer only for women will be boosted.

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5    https://www.blockbyblock.org/
6    https://hercity.unhabitat.org/

## 4.7 Initiative 2.3.

## Smart agriculture and food

Sihanoukville is willing to ensure local access to food supporting local based production and distribution. The food chain will be enforced by the smart city programme from the organic cultivation (including in urban gardens) to more sustainable distribution chains (supermarkets, markets, cooperatives, informal marketplaces, etc) and processing and preparation of food (catering, canteens).

A digital platform addressed to food producers, distributors and consumers will be created to support local food-agriculture economy both rural and urban. The platform will identify also public and private urban and rural areas to make available to cultivation for free especially addressed to vulnerable, low-income people.

A hub-Incubator so called "From food to Health – supporting social justice and fairness" will be set up, through a blended approach formula, where physical meeting will be combined with virtual/online experiences. The hub will deliver an educational training programme on modern agriculture techniques and organic production as well as an entrepreneurship learning programme to support the local food market.

A dedicated learning process for women in agriculture, food delivery and selling will be created as well as a virtual-physical community where exchanging insights, projects and information.

To launch local healthy food will contribute to the touristic attractiveness of the territory by increasing and improving local production, processing and preparation of food and branding /promotion of local products. This initiative will enhance also to change the consumer behavior: inviting citizens to consume more organic, seasonal, local and plant-based diets, while strengthening local community

engagement.

The initiative will be implemented in connection with the Smart Neighborhood Centers initiative to engage local communities in the process (1.3) and Land Tenure Domain Model initiative to identify the public and private areas to be used for cultivation (2.4).

## 4.8 Initiative 2.4

## Smart Solution for Housing and Land tenure

A Network for "Housing and Land Rights" will be set up to discuss and analyze, through a participatory approach, possibilities of housing and land tenure guarantee for marginalized – low-income people and for all. The Network will map housing possibilities matching public and private availabilities. Private housing availability may join the Network providing "solidarity rate" for housing will receive a benefit from the public, such as a discount on tax or other market opportunities. The compensations as well as the housing pro poor programme will be discussed and co-managed by the "Housing and Land Rights" Network which will become a Permanent Lab for ensuring housing for all.

A Social Tenure Domain Model[7] (STDM), a pro-poor Land Tool, will be set up. The Model promoted by the Global Land Tool Network and facilitated by UN-Habitat aims at supporting local communities and individuals in the development of pro-poor land management tools in order to address the technical gaps associated with unregistered land, the upgrading of slums and informal settlements and urban and rural management.

Participatory meetings, gender evaluation assessments and capacity building trainings (enforced by the Smart Neighborhood Centers – initiative 1.3) will be organized to implement the STDM, which registers the land information

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7    https://stdm.gltn.net/

through an open-source software[8]. Information will be linked to the other initiatives especially dealing with the e-governance system (initiative 1.2) and the smart agriculture and food (initiative 2.3).

A dedicated virtual space inside the e-governance platform (initiative 1.2) will be created where information, documents, data dealing with land permissions and housing will be shared.

## 4.9 Initiative 2.5.
### Safer city

A permanent crowdsourced digital diagnostic addressing urban safety will be set up.

The digital platform can be fed by girls and women, who can share their perception dealing with safety in urban public spaces. Factors like lighting, visibility, openness, signage, presence of people, presence of security, transport, natural surveillance, maintenance of the place, the state of the sidewalk will be assessed.

A multistakeholder safer cities programme should be also set up with the purpose to create synergy between data, policies and connectivity. Local governments should establish smart and safe data-led policies and mobile-based safe city connectivity systems. By consolidating geo-located and time-based emergency call data, emergency service reports and municipal complaints, incident maps can be built to show crime hotspots and incident times. This data can be integrated into a GIS management system, linking safety with other urban management concerns such as building permits, transportation and basic services or indicators such as income. The data can be used to develop spatial planning frameworks (initiative 1.1, 1.3, 1.4) and safety strategies, focusing on management of streets and public spaces as a key to neighborhoods safety.

## 4.10 Initiative 2.6.
### Health care for community

The existing tool to access to health care for poor so called IDPoor card will be enforced by the Sustainable Inclusive smart city strategy. First of all, a useful medical information will be available inside the E-governance platform created under the initiative 1.2. Second, it will be developed an application for mobile phones so called "Sihanoukville Health Care App" both for private and public health care centers where it will be possible to directly connect with medical information online. While internet access doesn't substitute for a medical appointment, it can reduce the need for doctor visits and provide supplemental information.



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8    https://stdm.gltn.net/downloads/

Dedicated "Health neighborhood space" in connection with the "Smart Neighborhood Centers" (Initiative 1.3) will be set up where trainings about health, food security, sanitation will be organized in order to enhance information and diseases prevention.

A dedicated tool for girls and women, with a special attention to poor women and women households will be established where physical meetings and digital networking will allow to discuss common problems and share solutions. Specific trainings for pregnant women and mothers will be organized to foster the collaboration between mothers in the health care of their family. A blended programme for women community leaders will be also implemented to support the self and mutual care inside the community, especially addressed to young mothers.

The initiative 3.1 which will provide several free internet zones in the city will improve the access to medical information and contacts with medical institutions.

## Smart inclusive economic system

It will be created a mobile application linked to the platform of E-Governance (Initiative 1.2) and E-Participation (initiative 1.1) and connected to the existing online maps, such as Google map, where small, medium, formal and informal markets can promote their products and inform citizens and tourists about their location. The application will be also linked to the initiative 2.2, the smart solutions for urban mobility, in order to provide access and connections also to informal and marginalized urban area and with the other initiatives, especially the initiative 2.3 focused on Smart agriculture and food and the initiative 3.1 for

providing accessible internet zones also in rural and informal areas.

This application will have the role to also promote Sihanoukville as a touristic destination which is willing to promote the just and equal transition aimed at attracting sensitive and sustainable tourism.

A Training on Inclusive economic smart system with a focus on sustainable tourism and market offer will be offered to retailers, where increasing the knowledge of business rights and related laws. A specific focus group will be dedicated to women to enhance their economic and business capacities.

## Accessible free internet zones in strategical urban and rural areas, especially addressed to poor and marginalized people

Key urban and rural areas will be mapped with the collaboration of local communities, stakeholders and citizens, in order to identify the most popular places in the city, where providing free WIFI Hotspots. The locations will be categorized in order to provide free internet access especially to the most unprivileged and low-income communities.

The hotspots will be also located in public facilities such as the educational and cultural centers, health care centers, libraries, sport centers and parks in the city center and in the suburbs.

This initiative will be positioned in the top priority of the present Sustainable Inclusive Smart City Concept in order to make possible the realization of the other initiatives which foresee the use of internet as an opportunity of inclusion for all the citizens.

# Permanent programme of computer/technology literacy for citizens trough the "Digital City Ambassadors"

A Permanent collaboration with the Education Centers and the Academia will be established in order to ensure an adequate education dealing with the new technology, the smart city approach and computer literacy.

A dedicated programme for local communities will be launched in connection with the Smart Neighborhood Centers (Initiative 1.3) to provide digital, technological education in deprived urban and rural areas trough the "Digital City Ambassadors" programme aimed at enrolling young people to support the capacity building education programme for all citizens. Once selected the Digital City Ambassadors will be trained on overall principles of people-focused smart city, the human rights lens for smart city and the gender approach in the use of new technologies. A specific focus for the Ambassadors on the 13 initiatives contained in the present "Sustainable Inclusive Smart City Concept" will be provided, focusing the attention on guiding people in benefitting from the E-governance and E-participation platform, contributing at the crowdsourced initiatives and getting information on health, economy, food production etc.
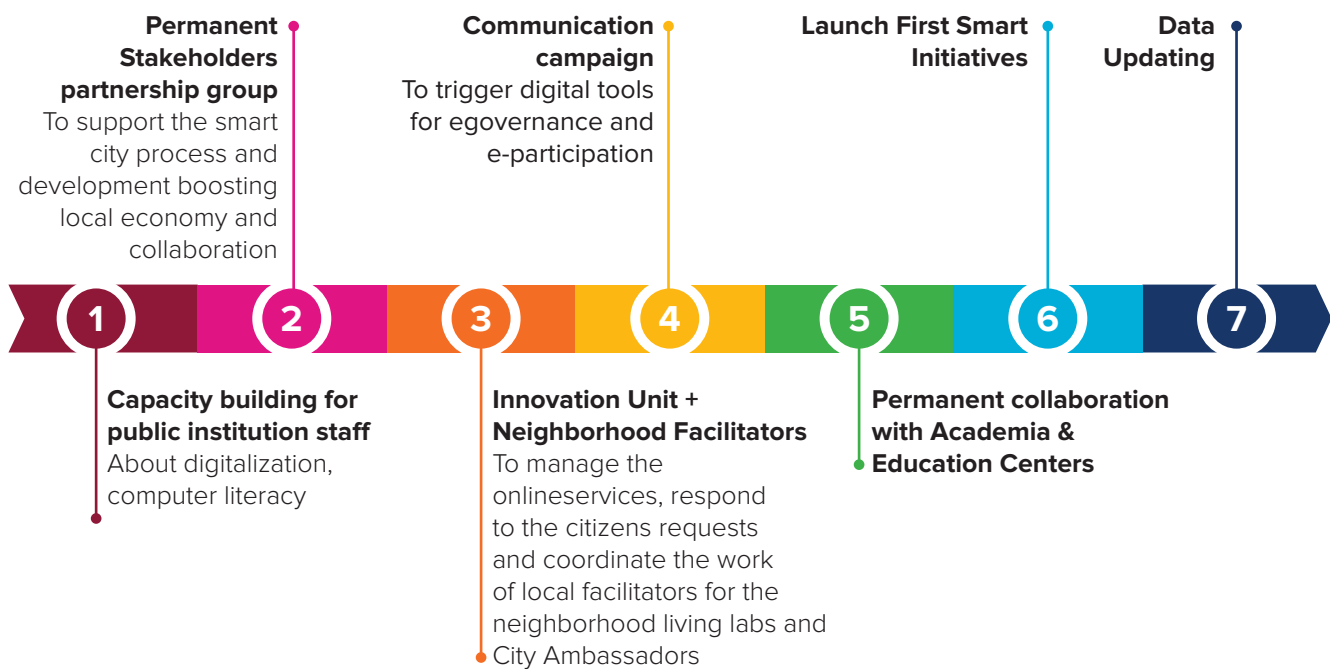
The Digital City Ambassadors will work in collaboration with the Innovation Unit staff and the neighborhood facilitators. They will also be actively engaged in the Neighborhoods Living Labs (Initiative 1.3) and in the Playful smart urban planning for youth (Initiative 1.4).



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# 5. HINTS AND TIPS FOR IMPLEMENTING THE SUSTAINABLE, INCLUSIVE AND SMART CITY CONCEPT IN SIHANOUKVILLE

Some hints and tips from other countries experiences aimed at contributing to the possible smooth implementation of the Smart City Concept in Sihanoukville, that are:

1. ***Capacity building for public institution staff.*** Local Authority staff have a leading role in fostering the smart city process. For that reason, to increase the capacities on digitalization, computer literacy and novel digital opportunities of the public institution staff is a starting point and a pre-requisite for the smart city strategy implementation.

2. ***Innovation Unit + local facilitators.*** To boost the Sustainable, Inclusive Smart City in Sihanoukville it will need to appoint an "innovation unit" within the Municipality with a dedicated staff to follow the digital transition process. The "innovation unit" will manage the online-services, respond to the citizens requests and coordinate the work of local facilitators and City Ambassadors working at neighborhood level.

3. ***Permanent collaboration with Academia and Education centers.*** The collaboration with the Education System is a strategic action to boost a fruitful smart city programme at city and provincial level. The Academia should be included from the beginning in the smart city capacity building programme in order to design an adequate and permanent digital high level education and ensure to young professional to benefit from the digital transformation.

4. ***Permanent Stakeholders partnership group.*** The smart city framework has to be launched by the local public institutions, but it must be implemented with the support of the key relevant stakeholders of Sihanoukville. To establish a permanent Stakeholders partnership on smart city can support the smart city process and empower the local economy.

5. ***Communication campaign.*** A tailored communication campaign is needed to trigger the use of digital tools for e-governance and participative purposes in order to engage citizens both living in rural and urban areas. Advertisements, radio announcements and other tailored activities must be developed to inform citizens about the importance of using technology and ICT systems as tools which foster inclusion, democracy and sustainability.

**Permanent Stakeholders partnership group**
To support the smart city process and development boosting local economy and collaboration

**Communication campaign**
To trigger digital tools for egovernance and e-participation

**Launch First Smart Initiatives**

**Data Updating**

**1** **2** **3** **4** **5** **6** **7**

**Capacity building for public institution staff**
About digitalization, computer literacy

**Innovation Unit + Neighborhood Facilitators**
To manage the onlineservices, respond to the citizens requests and coordinate the work of local facilitators for the neighborhood living labs and City Ambassadors

**Permanent collaboration with Academia & Education Centers**

6. ***Testing and Monitoring of pilot smart activities.*** It's important to provide the opportunity for the people to directly experiment the potential of the smart inclusive tools. For that reason, it's suggested to launch a series of initiatives as pilot actions of the sustainable inclusive smart city concept. An evaluation process will be set up to monitor the results of the activities and eventually modify the implementation.

Considering the local context and the priority expressed by the local working group, the following smart city initiatives should be launched as first and pilot smart initiatives in Sihanoukville:

## Pillar 1

- ***Initiative 1.1.*** *Smart Sihanoukville Platform for e-participation*
- ***Initiative 1.2.*** *E-Governance platform for citizens*
- ***Initiative 1.3*** *Smart Neighborhood Centers*

These smart initiatives allow to share information and data to support the local governance and democracy (1.2), trigger the citizens' participation to be actively involved in the local decisions dealing with the local development (1.1) and

engage local communities (1.3).

Through the Initiative 1.1 it is possible to call residents and local communities in sharing their needs and wishes to be implemented through the initiatives of pillar 2. Indeed the Pillar 2 is focused on the opportunity to re-shape city services and facilities (waste management, mobility, land tenure and housing, health, safety, etc) through people involvement, organizing crowdsourced smart activities. The initiative 1.3 will boost the digital transition at neighborhood level, supporting local population in sharing problems and finding together common solutions to be addressed by the initiative 1.1. and realized through the initiatives of Pillar 2.

## Pillar 2

- ***Initiative 2.1.*** *Digital crowdsourced maps on environmental issues (waste management, water, flooding)*

The initiative 2.1 is a priority action for Sihanoukville considering the emerging problems dealing with waste, pollution and flooding. This initiative should be a pilot action of the possibility to co-create solution and provide new services and facilities by the direct involvement of the local population as

a concrete response at the environmental issues.

Through this action the local communities will be actively engaged in a new dialogue with the Local Authorities and in a co-responsibility environmental management system.

A selected neighborhood should become a pilot area where testing the digital tool and monitoring through the living lab activity (1.3).

## Pillar 3

- **Initiative 3.1.** *Accessible free internet zones in strategical urban and rural areas, especially addressed to poor and marginalized people*

- **Initiative 3.2.** *Permanent programme of computer/technology literacy for citizens, through "Digital City Ambassadors"*

These initiatives allow the Province of Sihanoukville to tackle the digital divide and provide an educational programme for the citizens to be included in the digital transition process through a just inclusive approach.

7. **Data Updating.** The smart city system produces several data which must be used to update the smart city concept and initiatives. Indeed, the smart city development must be constantly fed with data to update the implementation process.

## LAUNCHING THE FIRST SMART INITIATIVES

**Pillar 1 - Initiative 1.2.**
E-Governance platform for citizens
Innovation Unit

**Pillar 3 - Initiative 3.1**
Accessible free internet zones in strategical urban and rural areas, especially addressed to poor and marginalized people

**Pillar 2**
The Initiatives of pillar 2 aimed to co-create solution and provide new services and facilities by the direct involvement of the local population. It's possible to start with the Initiative 2.1. Digital crowdsourced resources maps on environmental issues

| 1 | 2 | 3 | 4 | 5 | 6 |

**Pillar 1 - Initiative 1.1**
Smart Sihanoukville for e-participation
Innovation Unit

**Pillar 1 - Initiative 1.3**
Smart Neighborhood centers
Neighborhood Facilitators

**Pillar 3 - Initiative 3.2**
Permanenprogramme of computer/technology literacy for citizens through Digital City Ambassadors"

# 6. CONCLUSION AND OVERALL RECOMMENDATIONS

The present report highlights the importance to set the focus of the Smart city strategy for Sihanoukville that serves the people's needs, especially with a particular attention on the marginalized and vulnerable, through the Human Security approach.

The Smart, Sustainable and Inclusive City Concept composes of three Pillars and thirteen Initiatives, embraces the goal of "leaving no one behind" and design a framework based on three guiding principles: people-focused approach, human rights lens, and gender-based approach.

The smart activities have been created in two different levels of implementation: Smart initiatives at city level and Smart initiatives at neighborhood level.

- **Smart initiatives at city level.**

    These initiatives strive to foster a better urban-rural governance of Sihanoukville. The purpose of this set of initiatives is to trigger the engagement of local population in participating at the decision-making process through The Smart Sihanoukville Platform for E-participation - Initiative 1.1, provides a closed relationship between citizens and local authorities through E-governance platform for citizens - Initiative 1.2 and offers innovative Smart services to citizens promoted by Pillar 2 and Pillar 3.

- **Smart initiatives at neighborhood level**

    The initiatives at neighborhood level aim at involving local communities in the digital transition process to allow them benefitting from the smart innovation. The inclusion of the marginalized people, women and girls in the smart strategy and providing smart initiatives at neighborhood level are the foundation of this present Smart, Sustainable and Inclusive City concept. When working in the neighborhoods, it is forecasted to involve physically the community through the smart neighborhood centers and the health neighborhood spaces. A tailored space (both physical and virtual) for women and girls will be set up to listen their voices, needs and wishes. The collected insights from the neighborhoods about transportation, health, safety, waste, water, flooding etc., will be shared with all citizens through the Smart Sihanoukville Platform for E-participation (Initiative 1.1). In this way, requests, ideas, concerns and wishes from the communities will be taken into broader discussion to identify solutions for the whole community.

This innovative mechanism matches neighborhoods services with city governance, implemented by online tools and physical meetings need to be facilitated by a dedicated staff of people working at city and neighborhood levels.

- **Staff and stakeholders enrolled at city level**

    Sihanoukville municipality needs to create an "Innovation Unit", to facilitate and guide the smart city process. The "Innovation Unit" will manage the online services, respond to the citizens requests and coordinate the work of local facilitators working at neighborhood

level (Local Facilitators and Digital City Ambassadors). The Innovation Unit will collaborate with the Permanent Partnership for Smart city which composes of key stakeholders in Sihanoukville who support the smart city implementation and influence on the economic growth, as well as the academia who will promote the permanent digital education programme.

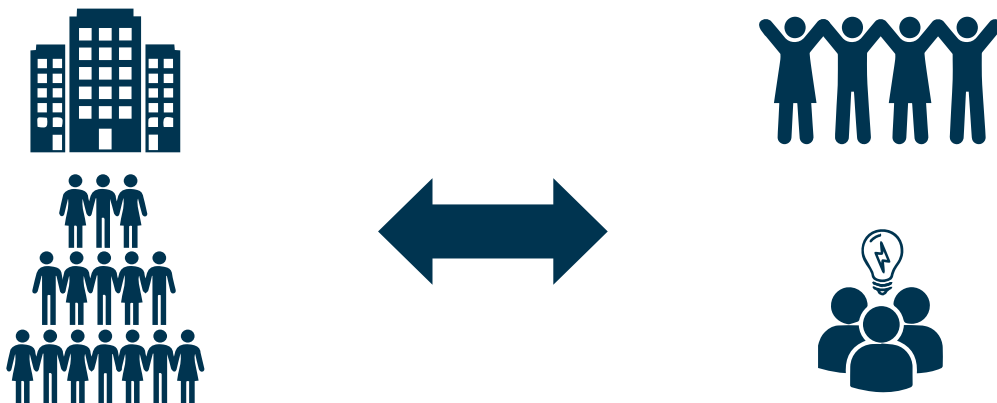- ***Staff and stakeholders enrolled at neighborhood level***

Local Facilitators will be appointed to work within the neighborhoods. They will be responsible for the implementation of the smart initiatives through the Smart Neighborhood centers (Initiative 1.4). The local communities will be engaged in all the thirteen Initiatives

to co-design tailored services and facilities needed by all citizens.

Moreover, Digital City Ambassadors will be engaged to trigger the intergenerational approach of the Smart City programme and improvement of digital knowledge at level. The Digital City Ambassadors will be trained about digital tools used globally in smart cities and the thirteen initiatives of the smart city concept.

The Innovation Unit will also help coordinated the local facilitators and Digital City Ambassadors. They will provide an important contribution for the implementation of the smart initiatives at neighborhood level, supporting especially the vulnerable people, which is in the main focus of this Smart, Sustainable and Inclusive City Concept.

## THE METHODOLOGY OF THE 3 PILLARS - 13 INITIATIVES



### SMART INITIATIVES AT CITY LEVEL

Through e-governance, e-participation, smart services

Supported by

*Innovation Unit, Academia, Smart City Partnership*

### SMART INITIATIVES AT NEIGHBORHOOD LEVEL

Through Smart Neighborhood Centers, Health neighborhood spaces

Supported by

*Neighborhood facilitators, Digital City Ambassadors*