

United Nations Economic Commission for Europe  
International PPP Centre of Excellence

**International PPP Forum:  
“Implementing the United Nations 2030 Agenda for  
Sustainable Development through effective, people-  
first Public-Private Partnerships”**

9 – 11 May 2017  
City University of Hong Kong  
Lau Ming Wai Academic Building

**Compendium of Case Study Material\***

\*This case study material contains the projects to be presented at the International PPP forum on Wednesday 10 May, and is being circulated by the secretariat as received from the contributors.



# Table of Contents

Wednesday, 10 May 2017

## Morning Session (11:00-12:30)

Case 1: Chile, Health Sector, Hospital Infrastructure PPP Programme Maipu And La Florida Hospitals	3
Case 2: Egypt, Waste Water Sector, New Cairo Waste Water Treatment Plant .....	8
Case 3: Ethiopia, Transport Sector, Ethiopia Light Railway Project .....	13
Case 4: Morocco, Energy Sector, Noor II and III solar power plants .....	18
Case 5: Poland, Urban Development, Development of Urban Adaptation Plans for cities with more than 100,000 inhabitants in Poland.....	23

## Afternoon Session (13:30-15:00)

Case 1: China, Transport Sector, MTR (Shenzhen) Line 4 PPP/BOT Project.....	29
Case 2: Ethiopia, Energy Sector, Energy Access to Shine Refugee Camp.....	34
Case 3: Philippines, Regional Development, Butuan City Regional Development Programme .....	39
Case 4: Ukraine, Port Sector, PPP Kherson Port & Lower Dnieper River .....	44
Case 5: United States of America, Disaster Recovery, PPP for Temporary-to-Permanent Housing in Disaster Recovery .....	49

## **Morning Session**

**(11:00—12:30)**

## **Case 1**

### **Chile**

#### **Health Sector**

#### **Hospital Infrastructure PPP Programme**

#### **Maipu And La Florida Hospitals**

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Project:	HOSPITABLE INFRASTRUCTURE PPP PROGRAMME MAIPU AND LA FLORIDA HOSPITALS
Project Proponent:	San José- Tecno Control S.A. (Spanish companies)
Project Organization:	Consortium through a concessionaire company



**Public Organization:** Ministry of Public Works mandated by the Health Ministry.

**Private Organization:** San José – Tecno Control consortium, in charge of: project development, building, supply of non-clinical furniture and operation of basic and special services.

**Capital Providers:** 100 % private financing.

**Why is this project a Case Study for People First PPPs:**

- Reduce the construction time and guarantee the delivery of the project in the agreed time.
- Avoids deviations in building and equipment budgets.
- Private sector has more experience in project management and is more specialized and innovative.
- Relevant risk transfer.
- Releases public resources for other projects.
- Allows economic programming of healthcare systems with historical deficit.



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Where:	located in Santiago's two main populated municipalities: Maipú and La Florida. These two hospitals represent an assigned population of more than 2 million people.											
Why:	the country is reforming the health system in order to achieve the following objectives: <ul style="list-style-type: none"><li>• Decrease inequalities</li><li>• Challenges in population ageing</li><li>• Provide services according to expectations</li><li>• Improve healthcare achievements</li></ul>											
What:	both hospitals were awarded in November 2009 and now they are in operation.											
Who:	<table><tr><th>Hospital</th><th>Superface (m<sup>2</sup>)</th><th>Number of Beds</th></tr><tr><td>Maipú</td><td>70.000</td><td>375</td></tr><tr><td>La Florida</td><td>72.000</td><td>391</td></tr></table>			Hospital	Superface (m <sup>2</sup> )	Number of Beds	Maipú	70.000	375	La Florida	72.000	391
Hospital	Superface (m <sup>2</sup> )	Number of Beds										
Maipú	70.000	375										
La Florida	72.000	391										
When:	the Ministry of Public Works mandated by the Health Ministry. San José – Tecno Control consortium won the tender.											

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## a) Increase access to essential services and promote equity

### Benefits for users:

- Reduce hospital start-up.
- Greater complexity in infrastructure and equipment.
- Guarantee maintenance and conservation of infrastructure.
- Maintenance and renewal of equipment
- Guarantee levels of service.



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## b) Develop a resilient infrastructure and improve environmental sustainability

- Guarantees maintenance and conservation of infrastructure's initial conditions in similar terms during the period of concession.
- Hospital design meets Chilean seismic regulation standards for public building. The regulation was reviewed during 2010 after the February earthquake, incorporating higher levels of security and requirements.
- There are existing insurances covering infrastructure from possible catastrophic events.
- The project was submitted to the Environment Impact Evaluation, fulfilling all environmental standards.

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## c) Demonstrate the economic and financial effectiveness of the project

In terms of public subsidy, both proposals required a 22% less of resources.

Hospital	Building stage			Operation stage		
	Max subsidy	Final subsidy	Saving (%)	Max subsidy	Final subsidy	Saving (%)
Maipu	27.494.727	21.418.393	22%	4.630.691	4.630.691	0%
La Florida	29.785.955	23.203.259	22%	5.016.582	5.016.582	0%

The construction cost per square meter using PPP is lower.

Hospital built with PPP (U\$/m <sup>2</sup> )	Hospital built directly (U\$/m <sup>2</sup> )	PPP/direct
<b>1.502</b>	<b>1.867</b>	<b>80%</b>

Operational budget of other hospitals is clearly lower through concessions.

HOSPITAL	operational Annual budget (U\$)	Annual concession budget (U\$)	Actual Budget vs Concession (%)
ANTOFAGASTA	36.784.850	21.475.030	71,29%
SALVADOR – GERIÁTRICO	46.418.938	22.531.768	106,02%
SANTIAGO OCCIDENTE	24.963.002	17.427.597	43,24%

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## d) Be replicable and scalable

The project is replicable due to the important benefits that presents:

- Lower costs in construction and operation.
- Reduces commissioning time in service deadlines.
- Offers more complex infrastructure with greater services, equipment and number of beds.
- Guarantees periodical maintenance and appropriate renewal of medial and clinical equipment.
- Ensures permanent levels of service previously defined in terms of food, cleaning, waste management and security.

This model is adaptable to the specific needs: it can vary from construction and maintenance of infrastructure up to the provision of all clinical and medical services.

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## e) Engage all stakeholders

During the stage of project design, citizen participation procedures were executed fulfilling the ministry's requirements.

At the same time, public authorities, both regional and national, have had instances of participation and contribution to the project. All which are regulated by the Environmental Impact Evaluation System.

The Health Ministry, Public Works Ministry and Health service authorities were engaged since early stages in the project development.

## **Case 2**

### **Egypt**

#### **Waste Water Sector**

#### **New Cairo Waste Water Treatment Plant**

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Project:	New Cairo Waste Water Treatment Plant (New Cairo WWTP)
Project Proponent:	New Urban Communities Authority (NUCA) – Ministry of Housing , Utilities and Urban Communities
Project Organization:	Orasqualia for the Development of the Wastewater Treatment Plant SAE

**Public Organization:** Ministry of Housing , Utilities and Urban Communities.  
Ministry of Finance in charge of the Public-Private Partnership Central Unit

**Private Organization:** Aqualia New Europe (is a joint venture of Aqualia (51%) and the European Bank for Reconstruction and Development (EBRD) (49%)) (50% shares), Orascom Construction Industries SAE (OCI) (50% shares), Aqualia Infraestructuras (EPC), FCC Aqualia (O&M), Orascom Construction Industries (EPC and O&M)

**Capital Providers:** SPV registered capital (Dec. 2015) 30,140,485.31US. National Société Générale Bank SAE (NSGB)12 (32.99%), Commercial International Bank (Egypt) SAE (CIB) (32.77%), Arab African International Bank SAE (17.12%) and Ahli United Bank (Egypt) SAE (17.12%).

## Why is this project a Case Study for People First PPPs:

Drinking water shortage was a pressing issue in Egypt's environmental sustainability. The existing wastewater treatment infrastructure did not produce water with adequate levels of quality to enable the water to be used to irrigate agricultural and urban green areas, forcing freshwater to be used instead. A PPP was used to build new infrastructure to reuse urban wastewater for irrigation, thereby reducing freshwater use. The project would additionally reduce the water pollutants entering the River Nile.

The administration benefited from the private know-how and capital investment while the private firms participated in a milestone profitable and sustainable project.



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Where:	The New Cairo Wastewater Treatment Plant is a plant located in New Cairo, a city created in the southeastern part of Cairo in 2000 in a former desert area, to ease problems deriving from an overcrowded capital.
Why:	One of the main challenges faced by the new city was the shortage of drinking water due to the harsh environmental conditions. The purpose of the urban wastewater plant was to treat regular urban wastewater. On the other hand, the lack of public capital to finance infrastructure was solved using a PPP, that would bring in highly needed capital and know-how transfer by private sector.
What:	(1) An increase in the availability of drinking water (since treated water would be used for irrigation purposes instead of freshwater); (2) a reduction in the environmental impact of the wastewater discharge into the River Nile (with a direct positive impact on human health and the river's ecology).
Who:	The contracting authority, New Urban Communities Authority (NUCA) was assigned risks such as landscape, supply of utilities and demand; Orasqualia was assigned risks such as construction, financing, interest rates, and foreign exchange rates.
When:	(2008) PPIAF assistance program report, (2009) announcement of the New Cairo WWTP contract, (2010) financial closure and construction start, (2011) political protests start, (2012) construction finished, (2013) New Cairo WWTP starts operations, (2029) contract ends.

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### a) Increase access to essential services and promote equity

Before the New Cairo WWTP was in operation, wastewater was emptied into the river, which had significant negative effects not only on the river's ecosystem but on public health, particularly on those more vulnerable that make from the river a way of living.

New Cairo WWTP was designed to:

- Reduce the use of (scarce) freshwater for tasks such as irrigating agricultural and urban green areas.
- Limit the volume of polluted water dumped into the river with consequent negative effects on human health and the ecosystem.

Benefits for the residents and society:

- Increase in the availability of freshwater.
- Reduction of pollutants dumped into the river led to improved public health.
- Better quality for farming increased the quality of products with direct effects on human health, and might have increased agricultural productivity, fostering economic growth in the region.
- The plant provided regular jobs for 63 permanent skilled workers directly and 617 workers indirectly.

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### b) Resilient infrastructure and improvement in environmental sustainability

The PPP allowed to bundle the construction and operations activities, adopting a lifecycle management approach, that led to efficiency gains and reduction of the maintenance cost for the SPV.

Maximum environmental standards required by NUCA. During the construction process NUCA did not accept, as is the common rule, any discharge of water of a quality outside the parameters established in the contract. That forced Orasqualia to construct (at its own cost) a 2 km pipe to the closest WWTP for further treatment during the commissioning period.

Once functioning the plant enabled a reduction in the quantity of pollutants (raw sewage) dumped into the River Nile. This improved the river's water quality, which had positive direct effects on the river ecosystem and on human health. Additionally, more fresh water was available for human consumption.

An estimated measure of the reduced river pollution with the plant working at full capacity would be as follows:

- 94 tons of BOD5 (five-day biological oxygen demand) per day avoided
- 105 tons of TSS (total suspended solids) per day avoided
- 135 tons of COD5 (five-day chemical oxygen demand) per day avoided

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## c) Economic and financial effectiveness of the project

The New Cairo plant mobilized private investments totaling \$140 million.  
PPP contract value US\$482 million for 20-year concession

Payment based on a sewage treatment charge including a fixed payment coverage (investment, debt, RoE and fixed operating cost) plus variable operating charge based on volume of treated sewage (m<sup>3</sup>)

The SPV was created on April 9, 2009, with registered capital in Egyptian pounds of E£250,000 (45,704 USD). On December 31, 2015 the registered capital was 236,000,000 EGP (30,140,485.31 USD).

The debt, structured as project finance without recourse, amounted to E£566 million<sup>11</sup> (103.47 million USD) in two tranches:

- E£550 million (100.55 million USD) in the form of a long-term facility (15 years) to finance up to 70% of the Project's investment cost (EPC cost) (estimated at E£785.2 million, then worth 143.55 million USD). The remaining 30% was in equity of the SPV.
- E£16 million (2.93 million USD) in the form of operation performance letters of guarantee to be issued during the operation period.

The banks acting as lenders were National Société Générale Bank SAE (NSGB)<sup>12</sup> (32.99%), Commercial International Bank (Egypt) SAE (CIB) (32.77%), Arab African International Bank SAE (17.12%) and Ahli United Bank (Egypt) SAE (17.12%). The banks had a step-in right and a pledge regarding the SPV shares acknowledged in the PPP agreement by all the parties involved under specific circumstances.

Local economy benefited from the spill over effects of importing the experience and know-how of a multinational enterprise such as Aqualia working in alliance with a local operator. That should result eventually in improvements of efficiency in the local economy.

The total number of regular jobs associated with the plant are 63 (5 for the SPV and 58 for the O&M joint venture) to add to the indirect jobs created.

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## d) Replicability and scalability

The New Cairo WWTP provides a good example on how to develop a complex, technologically advanced, and costly infrastructure in a lower middle income country, with environmental and sustainable problems, unstable political system, and weak currency. The latter is a critical element when trying to attract international bidders / investors.

Some of the valuable learned lessons that can be considered when trying to replicate this PPP project in other developing countries are:

- Adequate risk transfer to the part more able to deal with it
- Incentivize international firms to invest by offering fair financial conditions. That will also foster a more competitive tender
- Critical to set an independent PPP unit to provide stability to the project
- Design good governance systems to foster communication between the contracting authority and SPV

The experience acquired in the project was also used to design the Law No. 67, regulating Partnership with the Private Sector in Infrastructure Projects, Services and Public Utilities, passed on August 2010. A stable legal framework and the first successful experience can have positive effects on encouraging other Ministries and sectors to develop PPPs. Success as example.

The project also required training local employees to use the last technology systems used in the New Cairo WWTP. Ultimately, that would benefit local economy due to spill over effects and setting best practices.

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## e) Stakeholders engagement

As a urban project, New Cairo WWTP involved many different stakeholders

- Ministries: Ministry of Housing, Utilities and Urban Development, and Ministry of Finance
- Independent bodies: Public-Private Partnership Central Unit
- Regional governments: Cairo Governorate
- Firms: Financial institutions (IFC, ERDB, private banks), private firms including concessionaires and its providers
- Egyptian citizens, consumers, and fishermen.

New Cairo city is the result of the policy implemented by the Egyptian government to ease the congestion in downtown Cairo. The lack of a proper water treatment system affected particularly Egyptians through product consumptions, either consuming fish from the River Nile or agricultural products irrigated with polluted water.

However the most affected were those making from that area of the Rive Nile the way of their living, as they were exposed to water with high pollution levels.

The construction of the New Cairo WWTP improved substantially the environmental conditions and made more fresh water available benefiting the society across the board. These improvements had specially beneficial effects on those more vulnerable.

A good governance system is critical for the correct development of the process and involvement of the main stakeholders in the decision making. New Cairo WWTP established two governance committees to supervise how the project was functioning and to deal with unexpected situations that might arise during the contract: Partnership Committee and Performance Monitoring Committee.

The PPP governance committees were composed of members of the administration and SPV to supervise the correct functioning of the infrastructure and to deal with eventual changes in the circumstances under which the contract was signed. They included also independent experts.

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## **Case 3**

### **Ethiopia**

#### **Transport Sector**

#### **Ethiopia Light Railway Project**

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<b>Project:</b>	<b>Ethiopia Light Railway Project</b>
<b>Project Proponent:</b>	the AALRT Operation and Maintenance Management Service
<b>Project Organization:</b>	Ethiopian Government

**Public Organization:** Shenzhen Municipal Government, Ethiopian government

**Private Organization:** China Railways Engineering Group (CREC), Shenzhen Metro Group Co.Ltd. (SZMC), Ethiopian Railways Corporation

**Capital Providers:** China Railways Engineering Group (CREC), Shenzhen Metro Group Co.Ltd. (SZMC)

## Why is this project a Case Study for People First PPPs:

This project connects Chinese urban railway transit construction service functions, technical standards, reliability, operation and management documents with overseas urban railway transit projects, and operates and cultivates local talents in urban railway transit construction, operation and management (win-win cooperation in Belt and Road Initiative).



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<b>Where:</b>	This project is in Ethiopia. The planned lines are 75km in the overall length, and the lines in the Addis Ababa E-W & N-S (Phase I) Project to be executed currently approximate 31.048km in length.
<b>Why:</b>	In May 2014, Premier Li paid an official visit to Ethiopia and stated that the cooperation between China and Ethiopia would focus on the infrastructure construction and energy resources development and expand the win-win collaboration between our two countries on light railway and highway projects. China would like to share all the related experience with Ethiopia and transfer the competitive industries and technology to Ethiopia.
<b>What:</b>	With the experience and top-rank service brand in urban railway transit industry, SZMC will bring the operation management technology to the global market.
<b>Who:</b>	AALRT staff composition includes three parties. The Management Contract composed of SZMC and CREC is in charge of operation organization. And ERC sent staff to learn from the management contract. The management authority will be transferred to ERC on the expiry of the contract.
<b>When:</b>	In May 2014, the consortium of SZMC and CREGC bid for the AALRT Operation and Maintenance Management Service and signed a contract with ERC in December, 2014. The contract period is 41 months. After 3 years of operation, the local staff will take over all the operation and maintenance work.

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## a) Increase access to essential services and promote equity

AALRT project includes two lines, which are N-S Line and E-W Line. As for this E-W line of LRT project (Phase I), the total length of the subgrade section is 13.09km and the total length of elevated station is 3.92km. There are a total of 22 stations, including 6 elevated stations, 2 semi-underground stations and 14 ground stations with the average station interval of 794m. The N-S line subgrade length is 10.06km and the length of elevated section is 5.907km and the underground section is 0.66km. There are a total of 22 stations, including 8 elevated stations, 1 underground station and 13 ground stations with the average station interval of 772m.

The N-S Line was put into official operation on Sep. 20th, 2015. By Nov. 20th, the total ridership had reached 6.5 million, with the average daily ridership of 60 thousand. E-W Line was put into official operation on Nov. 10th, 2015, by Nov. 20th, the total ridership had reached 2.8 million, with the average daily ridership of 6 thousand. Currently, the two lines are in full operation.

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## b) Develop a resilient infrastructure and improve environmental sustainability

Ethiopian government invited Shenzhen Municipal Government to finalize the Safety and Trial Operation Conditions Assessment. Therefore, Shenzhen Urban Railway Transit Association accomplished Safety and Trial Operation Conditions Assessment for AALRT (Phase 1). The experts team prepared the documents auditing and on-site inspection of operation preparation, light railway construction and equipment system. Then the experts team formulated the Safety and Operation Conditions Assessment Report for AALRT(Phase 1) and put forward the issues and recommendations for modification.

In the semi-annual operation management KPI evaluation of AALRT, as the operation supervisor, the consulting company of Italian National Railway Group gave a high score of 99.95 to the operation of AALRT by SZMC, fully affirming the operation and management level of SZMC.

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## c) Demonstrate the economic and financial effectiveness of the project

As of February 28, 2017, the passenger flow volume of the network is 52.9 million, maximum daily passenger volume is 185,000, total Fare revenue is 160 million Birr (approximately 6.95 million US dollars), with the strict control of the operation and high attention for the operation safety ,the ridership maintains steady growth.

In September 2016, Shenzhen Metro signed the contract of the advertising resources in 9 stations, which can increase the income by 24 million Birr (approximately 1.04 million US dollars). At the same time, Shenzhen Metro Launched the public bidding work of the rest of the advertising resources in the other 30 stations, which will increase the revenue by nearly 100 million Birr (approximately 4.35 million US dollars) every year for the light rail company .

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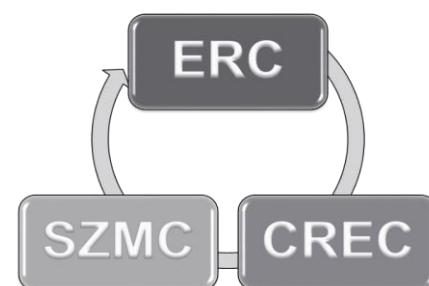
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## d) Be replicable and scalable

The project can be replicated in other countries in Africa and other continents.

Shenzhen Metro launched AALRT staff training course, which includes the local training course and the training in Shenzhen. AALRT has completed theoretical training of 20523 persons/3289 class hours totally, including 19010 persons/2833 class hours for Ethiopian staff, 1628 persons/453 class hours and 774 persons/76 class hours for local staff.

Shenzhen Metro believes that training is a crucial part of replicability and scalability of projects.



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## e) Engage all stakeholders

For Ethiopian people, Ethiopia light rail is the first urban rail transit line. It has not only greatly improved the traffic mode for local residents who always travel by taxi or by bus, and also brought the great convenience to local residents.

For the government of Ethiopia, Chinese government has provided loans, which solve the financial difficulties for Ethiopia's government in the large infrastructure projects.

## **Case 4**

### **Morocco**

#### **Energy Sector**

#### **Noor II and III solar power plants**

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<b>Project:</b>	<b>Noor II and III solar power plants (Morocco)</b>
<b>Project Proponent:</b>	Thibaut Mourgues (tmourgues@4ipgroup.org)
<b>Project Organization:</b>	4IP Group

**Public Organization:** Morocco Agency for Solar Energy (MASEN)

**Private Organization:** *Investor and Operator:* ACWA Power (Saudi Arabia)  
*Contractors:* Sener (Spain), Sepco III (China)

**Capital Providers:** *Equity:* consortium led by Acwa Power (75%), MASEN (25%)  
*Debt:* MASEN, through IFIS (African Development Bank, the Agence Française de Développement, the Clean Technology Fund, the European Commission, the European Investment Bank, Kreditanstalt für Wiederaufbau and the World Bank).



## Why is this project a Case Study for People First PPPs:

- Renewable energy generation contributing to reorientation of energy mix toward improved sustainability
- Affordable tariff through innovative blending financing
- Industrial integration (35% local content) ensuring know-how transfer
- Market rate equity return (competitive tender) for the investors



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<b>Where:</b>	Draa-Tafilalet region, 10 km from Ouarzazate (Morocco), in a sparsely populated area. Power will be connected to the national grid, thus having a national impact.
<b>Why:</b>	fossil fuel represented 94% of energy consumption in 2008. Renewable energy plan aims to reach 42% renewable energy by 2020. Solar energy should represent 25% of installed capacity by 2020 (over 2000 MW). Noor will be the major component of the plan, with respectively 160 MW for Noor I, 200 MW for Noor II and 150 MW for Noor III.; PPP chosen to involve private sector for technical skills and equity finance.
<b>What:</b>	ensure clean and affordable power generation to cope with expected consumption growth and limit reliance on imported fuel.
<b>Who:</b>	MASEN: public authority (preparation, land owner, debt financing, tendering, contractual counterpart, equity shareholder); Government of Morocco (debt guarantee); ONE public utility (power purchaser); Private party (designing, equity financing, construction, operation and maintenance); Public party: takes full risk on debt; private party: takes full risk on debt and equity.
<b>When:</b>	Project prepared from 2010 onwards (originally initiated by Desertec); Tender: 2014; Start of construction: 2015 ;Start of operations: late 2017/2018; Contract ends: 2042.

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## a) Increase access to essential services and promote equity

Over 99% of population has access to electricity. Challenges ahead lie in ensuring affordable and reliable power generation.

The totality of the project production will be purchased by the public utility (ONE) under a PPA contract. Thus the Government remains in charge of distribution issues (connecting rural areas, determining tariffs, etc.) and has full control over distribution social policy.

The project tariff is set at 1.42 MAD/kWh for Noor III, i.e. 0.15 USD/kWh. Its increase is limited by an indexation formula for the duration of the contract.

Therefore ONE is not financially constrained by expensive commitments which would limit its capacity to implement affordable tariffs for the poor or for businesses.

In addition the project includes industrial integration for 35%, know-how transfer, and directly and indirectly creates job.

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## b) Develop a resilient infrastructure and improve environmental sustainability

Noor II is CSP using parabolic trough and with 7 hours energy storage

Noor III is CSP using solar power tower with 8 hours energy storage

Both plants use dry-cooling systems. All necessary water is produced through the local Mansour Edabbhi dam with a negligible impact on overall quantity available (less than 1%).

The environmental impact lies in the reduction of CO<sub>2</sub> emissions. Noor II and III save around 0.5 mt CO<sub>2</sub> per year, or 13 mt during the 25 years operating period.

No adverse significant environmental or social impact is expected from project construction and operation.

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## c) Demonstrate the economic and financial effectiveness of the project

Project IRR: 4%

Equity IRR: 7%

Financing plan (in M Euros):

IFIs: 1 392

EU grant: 90

Sponsors: 270

Total: 1 752

Project debt is raised by MASEN and passed through (same conditions) to the project company.

Masen will acquire all the power produced through a Power Purchase Agreement and pass it through to ONE, the public utility.

The project will support :

- local economy: jobs creation, industrial integration, spillover effect
- Moroccan economy: fuel import savings 'estimated to 0.3% GDP), affordable energy to sustain development (power consumption growth rate of 5%/year)

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## d) Be replicable and scalable

The success of the project has inspired similar project in wind power generation in Morocco.

Other countries can replicate the project by taking a few steps:

- Developing a national strategy to increase renewable energy share in energy mix
- Creating a specialized agency with the required flexibility and expertise
- Securing Debt concessional funding from donors and IFIs
- Organizing a well prepared and highly competitive tender resulting in an affordable tariff
- Imposing industrial integration constraints to benefit local industry

The economic and social impact of the project is evident:

- locally, it will boost the job market (200 to 1200 jobs during construction). A Recruitment Policy is incorporated into the EPC's Construction Environmental and Social Management Plan (CESMP), which sets out the proposed measures to maximise the benefits to the local population and economy. The number of local population employed by the project and the training provided to the workforce is monitored. The employment of women and vulnerable groups is specifically targeted and monitored.
- It will foster the renewable energy industry in Morocco, with a view to export regionally the know-how
- Nationally, it will contribute to providing affordable energy required by economic development and households consumption.

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## e) Engage all stakeholders

The project was highly consensual. Masen organized public consultations from 2010 in accordance with Moroccan law and international standards. A public enquiry was held in September 2011.

The project was presented in 2015 to a mix of local inhabitants, Government and administrative bodies, local private offices and associations. Concerns raised involved:

- Consumption of water during the operation phases
- Solar flux/rays from the tower on neighbouring communities
- Employment
- Role of the project in the development of the local population

The mitigation measures set in place include:

- Minimal water use,
- Zero wastewater discharges,
- Water treatment for reuse onsite,
- Inclusion of provisions in the Environmental and Social Management Plan to promote the employment of the local population and the provision of training.



## **Case 5**

### **Poland**

#### **Urban Development**

#### **Development of Urban Adaptation Plans for cities with more than 100,000 inhabitants in Poland**

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Project:	Development of Urban Adaptation Plans for cities with more than 100,000 inhabitants in Poland (MPA Project)
Project Proponent:	Ministry of the Environment
Project Organization:	Public

**Public Organization:** Ministry of the Environment – beneficiary & coordinator, Ministry of Finance – State Budget - provides national contribution to the Project budget (the rest of Project budget is provided by EU-Funds).

**Private Organization:** Environment Protection Institute — National Research Institute (leader), Institute of Meteorology and Water Management — National Research Institute, Institute for Ecology of Industrial Areas and a consulting and engineering company ARCADIS, as well as a subcontractor responsible for project communications — Deloitte Poland.

**Capital Providers:** EU Funds: Operational Programme Infrastructure and Environment 2014 – 2020 (85%); National Funds (15%)

## Why is this project a Case Study for People First PPPs:

Project aims at the vulnerability and risk assessment of each city to climate change and at planning adaptation solutions, including soft and hard measures with respect to the identified hazards. All Urban Adaptation Plans will be developed in accordance with one methodology. The project will contribute to the improvement of the safety and quality of life of the citizens. It will also support the local authorities in accessing financial resources for the investments.



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Where:	Project is located in Poland, on the basis of the partnership with 44 cities, mostly with more than 100 000 inhabitants, almost 30% of Polish population will be covered by Urban Adaptation Plans.
Why:	Cities are particularly sensitive areas where the most urgent, topical challenges are concentrated, from the shortage of water and poor air quality, flood risks and hazards, heat waves/island to economic disturbances and social instability. The project is the first step to adapt urban areas to climate changes, a role-model for other areas and a reference point for further works in the field of adaptation in Poland.
What:	The major objective vulnerability assessment to climate changes of 44 largest Polish cities and planning relevant and effective adaptation measures appropriate for the identified threats.
Who:	Ministry of the Environment with support of external Contractor - Consortium and 44 partner cities. Partners are responsible and obliged for cooperating with the Contractor, have to establish the city-interdisciplinary team, including the leader - the contact person.
When:	January 2017 – signing the agreement, Contract lasts 24 months - for Urban adaptation plans development process (including public consultations, SEA etc). Project terminates in 2019

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## a) Increase access to essential services and promote equity

Urban Adaptation Plan for the city means resilient and climate proof infrastructure and society

Main goals:

- Determination of vulnerability of the largest cities to climate change
- Planning for adaptation actions at the local level
- Raising awareness of the need for adaptation to climate change at the local level

Project and its outcomes will be accessible to all without restriction on any grounds.

Outcomes will result in meaningful improvements and resilience to climate change impacts for most important essential services such as water sources, energy infrastructure, health and well-being of the citizens.

The participation of stakeholders and city dwellers in MPA development will facilitate implementation of activities stipulated in MPA in the future (approval of the suggested options to adapt to climate changes). At each project stage, the documents will be consulted with the appropriate urban team and stakeholders.

As part of the project, a large-scale information and educational campaign is planned, aimed at raising citizens' awareness in the field of climate change and of the need for adaptation to its effects.

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## b) Develop a resilient infrastructure and improve environmental sustainability

Developing climate adaptation strategies (plans) is the first step aimed at strengthening resistance and adaptation to changing climate conditions. Due to its scale, this is an innovative and unique project. The result of the project, which means next step in this context, i.e. implementing adaptation measures will enhance cities' resilience to climate change, and consequently, the entire country.

MPA implementation will change the everyday life of city inhabitants. For instance, the modernized flood-protection system, effective rain water management procedures, green and blue, ecosystem-based solutions or the development of the information and alarm systems in case of hazard will make the inhabitants feel safer.

Aesthetic changes in the urban infrastructure and vegetated areas, reduced thermal hazard, improved living and investment conditions thanks to the MPA relations to urban spatial development plans shall improve the comfort of living in the cities and reduce the risk resulting from the climate change effects.

Strategic Environmental Assessment of the MPA Project will be undertaken and also Environmental Impact Assessments will be carried out for the actions implemented as a result of the project.

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## c) Demonstrate the economic and financial effectiveness of the project

Every city copes with the climate hazards specific to its structure and conditions. Poland is highly diversified in this respect. The extreme weather phenomena found in Poland include e.g. high temperatures or heavy rainfall. Floods, inundations or droughts are the immediate hazards for the inhabitants' safety, their housing situation and urban infrastructure.

Implemented on the basis of the urban plans adaptation actions will avoid losses, so these actions will certainly pay off. Every 1€ invested for adaptation to climate change represents 4€ - 7€ savings that would need to be invested into actions after climate related events.

Implementation of the urban adaptation plans will involve engaging local businesses and creating jobs.

For the non-investment project such KPIs was not counted, but cost-benefit analysis will be carried out during the project implementation to analyze adaptation options for every city.

For Poland the probable consequence of failure to take adaptation actions in all sectors will be losses at around PLN 86 billion in the perspective of 2020, which in the years 2021-2030 could amount to up to PLN 120 billion.

MPA Project has Non-investment and Non-return character.

Project is funded by EU Funds: Operational Programme Infrastructure and Environment 2014 – 2020 (85%) and National Funds (15%)

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## d) Be replicable and scalable

Project develops methodology for other cities, also middle and small ones. The stages of the process can be replicable for any local government unit or region.

Project engages actors on different levels such as: central governments, local governments, researchers, institutes, experts. Moreover as an effect of the project outcomes also private sector will be involved for the execution of the adaptation measures and actions selected for implementation in each cities urban adaptation plan

One methodology and one scope of the plans for all partners plays an important role at the implementation phase of the documents. Due to this solution easy exchange of the solutions, good practices and project ideas will be possible. Another positive aspect of one methodology is the ease of comparability and completeness of cities vulnerabilities, climate impacts and conditions as well as indicators for the future evaluation process of the project.

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## e) Engage all stakeholders

Project engages actors on different levels such as: central governments, local governments, researchers, institutes, experts. Moreover private sector will be involved for the execution of the adaptation measures and actions selected for implementation in each city as an outcome and result of the Project.

Awareness among decision makers and society is a key to successful and effective adaptation to climate change process. It's crucial to be sure that the problem of the climate-related impacts and the significance of climate change adaptation is properly highlighted at every level. It was a very important issue considered at the stage of signing the partnership agreement between cities and Ministry of the Environment.

An important component is also the participation and involvement of stakeholders and MPA beneficiaries (cities) and public consultations of the Project, including consultations of proposed adaptation measures and solutions. City inhabitants are more and more active and aware of the changes and due to involvement in the MPA development process they will obtain further knowledge and experience and influence over the local government later decisions on the selection and implementation of adaptation measures elaborated in MPAs

## **Afternoon Session**

**(13:30—15:00)**

**Case 1**

**China**

**Transport Sector**

**MTR (Shenzhen) Line 4 PPP/BOT Project**

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Project:	Shenzhen Long Hua Light Rail PPP/BOT Project
Project Proponent:	Main line and branch line of Shenzhen Long Hua Light Rail
Project Organization:	Shenzhen Municipal Government

**Public Organization:** Long Hua (Shenzhen) District Government, Shenzhen Metro Group

**Private Organization:** Qian Hai Fund Corporation (Shenzhen)

**Capital Providers:** Qian Hai Fund Corporation (Shenzhen)

**Why is this project a Case Study for People First PPPs:**

Long Hua light rail construction provides great benefit for the citizens in Shenzhen. Besides reducing traffic congestion, secondary roads are build and building blocks are constructed along the line.



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<b>Where:</b>	Long Hua light rail is located in the Long Hua District of Shenzhen, Guangdong, China. This line can be connected with metro Line 4.
<b>Why:</b>	By implementing the urban railway transit PPP/BOT project, innovative investment and financing systems will be used, and finally it can realize a more positive competition and healthier project development.
<b>What:</b>	The project improves international development of Shenzhen and provides citizens with better urban railway transit services.
<b>Who:</b>	Long Hua (Shenzhen) District Government, Shenzhen Metro Group, Qian Hai Fund Corporation (Shenzhen)
<b>When:</b>	Long Hua district government began to launch the study of light rail project PPP/BOT in 2013. The formal contract was signed in July 2015. This line will be officially put into use in June.2017.

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## a) Increase access to essential services and promote equity

With this project, all the districts of Shenzhen can be connected more closely. They will be the most preferable destinations of regional economy and social resources. It is significantly important to promote the modernization and internationalization level of Shenzhen city. With the technology used in this project, not only the carbon dioxide emissions can be reduced, but also the urban landscape can be promoted. For the citizens, the light rail is an effective and helpful project, especially for the area which cannot be covered by the metro lines.

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## b) Develop a resilient infrastructure and improve environmental sustainability

Main line of Demonstration Line starts from Qinghu Station of Line 4, and crosses Qinglong Road, Meilong Road, Dahe Road, Renmin Road, Central HUanshi Road, Ping'an Road, and the crossing of Guanlan Avenue. The branch line is set in South Huanguan Road. The main line is 8.59 km with 15 stations of which the average distance between stations is 606m. The branch line is 3.13km with 5 stations of which the average distance between stations is 572m.

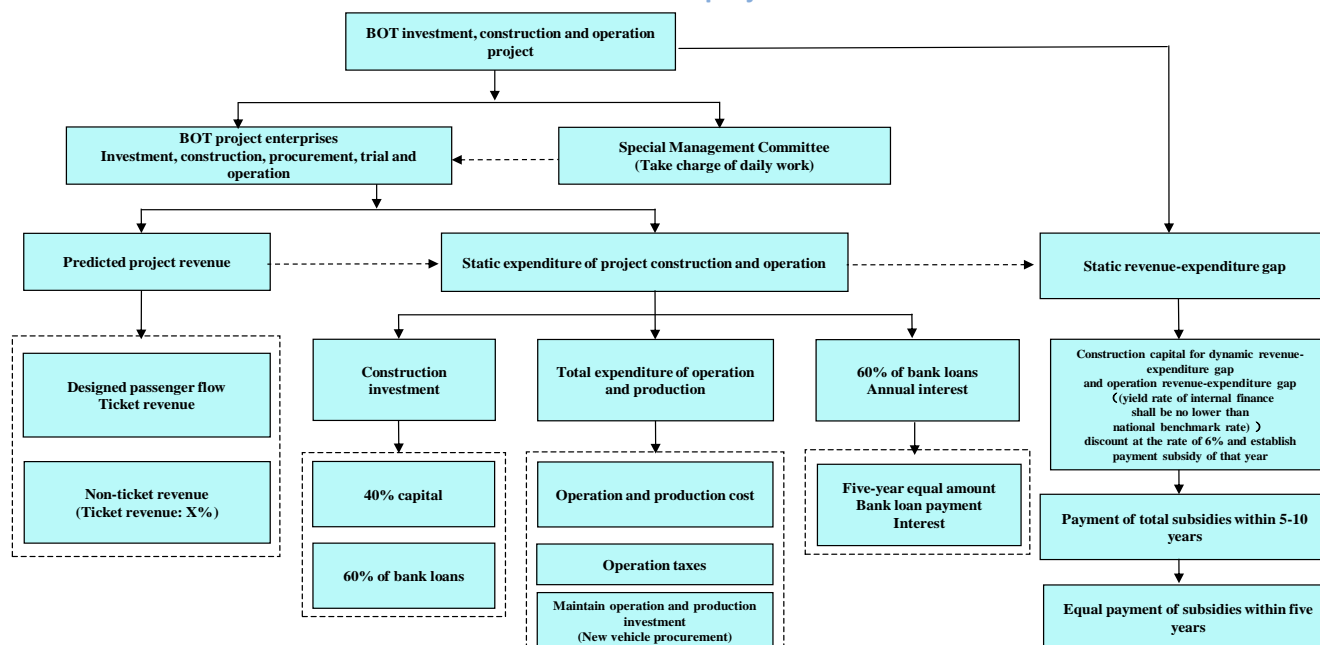
Trains are 100% low-floor steel wheel and steel rail tramcars. Wireless (super-capacitor) energy storage for power supply. Initial stage: 15 cars; long-term stage: 34 cars.

The sections and greenbelts between trams jointly save land resource. Crossings of trams are jointly shared with other road vehicles.



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## c) Demonstrate the economic and financial effectiveness of the project



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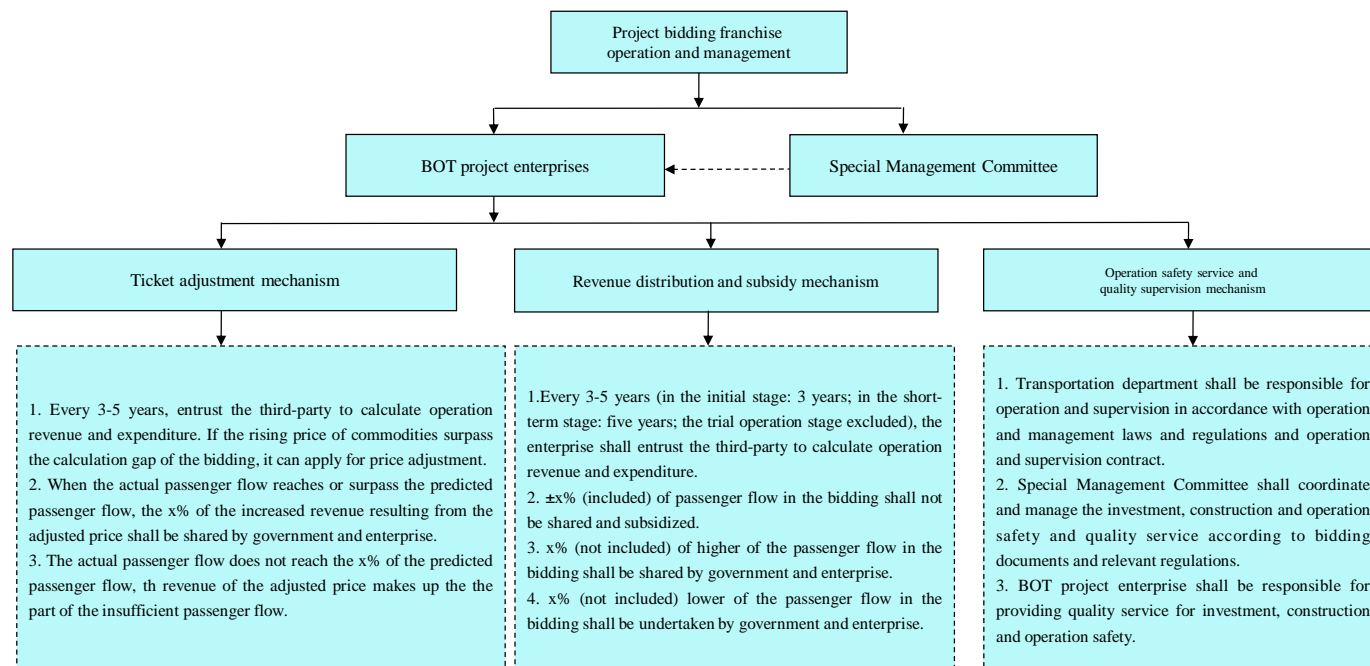
## d) Be replicable and scalable

The transformed and upgraded investment, construction, operation and management in urban rail transit make the responsibilities, rights and interests of government, society and enterprises more clear. This has attracted the companies to invest in the construction and operation of urban rail transit. It is expected that this will result in better management.

This project provides the methodology for other countries or regions, especially in the city infrastructure construction field.



## e) Engage all stakeholders



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## **Case 2**

### **Ethiopia**

#### **Energy Sector**

#### **Energy Access to Shine Refugee Camp**

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Project:	Energy Access to Shire Refugee Camps in Ethiopia <a href="http://www.alianzashire.org">www.alianzashire.org</a>
Project Proponent:	
Project Organization:	



**Public Organization:** AECID Spanish Agency for International Development Cooperation  
itdUPM Innovation and Technology for Development Centre, Technical University of Madrid

**Private Organization:** Iberdrola, Philips Lighting Spain & Fundación Acciona Microenergía

**Other Organizations:** UNHCR United Nations High Commissioner for Refugees. Collaborating partner.  
NRC Norwegian Refugee Council. Implementing partner.

**Capital Providers:** Seed capital provided by AECID. Human and in kind capital provided by private organizations and itdUPM.



## Why is this project a Case Study for People First PPPs:

Alianza Shire is a cross-sectoral partnership where public, private and international organizations combine resources in order to improve energy access in humanitarian contexts, specifically in refugees and IDPs camps. Energy access is a problem that need to be approached through innovative solutions able to solve the challenges faced in a refugee camp due to the lack of energy like environmental degradation, SGBV, absence of livelihood opportunities and limitations in the provision of basic services.



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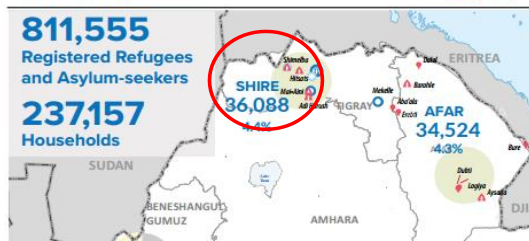


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## Where?

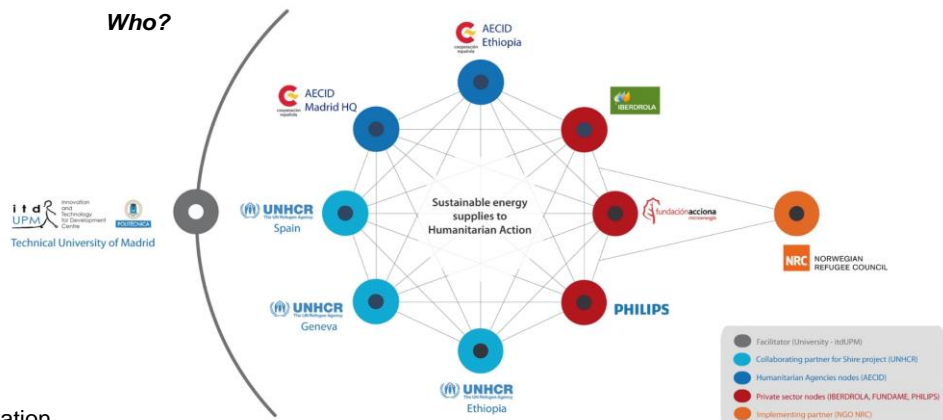
### ETHIOPIA

Refugees and Asylum-seekers  
as of 28 February 2017



**Shire Refugee camps:** Eritrean refugees, young population  
**Adi-Harush:** Settled in 2010, sheltering 8000 refugees

## Who?



## What & When?

### Why?

Gender and protection  
Lack of livelihood opportunities  
Deforestation  
Conflict with host community  
Camp management

**Issues related to the lack of energy access**



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## a) Increase access to essential services and promote equity. Pilot project

### Lighting

- Installation of street lighting. 64 lighting points in more than 4 km around the camp and the host community
- Installation of indoor lighting in 7 communal kitchens.

### Improvement and extension of the electricity grid

- Connection of 7 communal services, including communal kitchens, the Primary School, Market Places, Wellness Centre for women and girls
- Reparation and rehabilitation of one transformer
- Installation of protections in 14 communal services (Distribution boxes, General Protection Boxes, ground connections...)

### Protection issues

- Prioritization of the areas and services more relevant for the life of the unaccompanied minors in the camp
- Prioritization of the zones with a higher rate of gender based violence incidents
- Inclusion of the Host Community



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## Adi-Harush refugee camp – Street Lighting Map



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## b) Develop a resilient infrastructure and improve environmental sustainability. Pilot Project

### Training

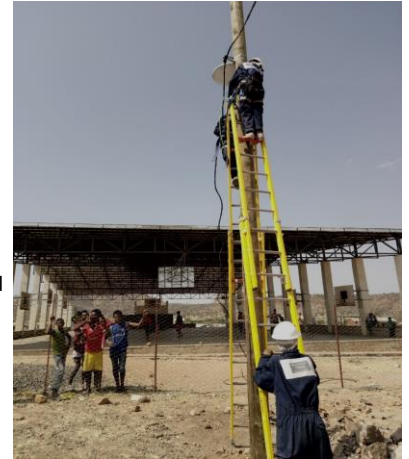
- Theoretical training (lighting, electric grid, risk prevention and first aid) to 28 persons
- Practical training (installation of the equipment) to 15 refugees and 4 persons from the host community

### Technical Sustainability

- Creation of an Operation and Maintenance Work Team, formed by 4 refugees that will work as Norwegian Refugee Council social workers with a 3 years contract
- Main activities: Maintenance of the installations, connection of new services and collection of information for the monitoring and evaluation

### Environmental impact

- Deforestation. The connection of the communal kitchens to the grid will avoid the collection of firewood for cooking purposes.  
According to the estimations, depending on the availability of electricity from the grid, around 1500 Tn firewood per year will not be collected
- CO2 emissions. The connection of the communal services will reduce the emissions of CO2 due to the burning of firewood for cooking or diesel for running the services. The CO2 emissions savings will be between 1000 and 3000 Tn per year, depending on the availability of energy from the grid



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## c) Demonstrate the economic and financial effectiveness of the pilot project

### Funds

- Seed capital: 280000 € since December 2014, funded by AECID
- Human resources and in kind contributions:
  - Private companies: IBERDROLA, PHILIPS, FUNDACIÓN ACCIONA
  - itdUPM
  - UNHCR

### Estimated impact

- Key data: Daily diesel consumption for running the communal services in the camp:  
 $\text{€}/\text{L} = 166\text{€}/\text{day} = 60000\text{€}/\text{year}$   
Price of kWh from diesel generators: 0,25 €.  
Price of kWh from the grid: 0,029 €.
- Economic savings: Depending on the availability of electricity from the grid, around 35000 €/year
- These savings don't include those avoided costs in terms of SGBV incidents, deforestation or CO2 emissions



### Livelihood opportunities

- Operation and Maintenance Work Team created among the refugees trained to ensure the sustainability of the installations
- Opportunities of the creation of energy related businesses to the refugees trained by the project

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## d) Be replicable and scalable

### In Shire refugee camps

Once the pilot project has been successfully implemented, the replication in Shire refugee camps would be feasible due to different factors like:

- Knowledge of the context,
- Elaboration of a specific tools adapted to a refugee camp context (training toolkit, audit of the grid)
- Synergies created at field level
- Availability of quality material.

### In other camps in Ethiopia

- Common factor in Ethiopian refugee camps: connection or proximity to the grid
- Participation of national electric company (EEU)
- Involvement of Governmental Agency for Refugees (ARRA)

### In other refugee camps

- Involvement of UNHCR
- Need of characterization before design of solutions
- Relevant implementing partners/Operators with presence in the camps like NRC
- Possibility of any kind of energy intervention due to the background of the companies: grid, wind power, hydro power, lighting, solar and business models

### Other sectors

- Water: solar pumping
- Livelihoods: energy for private businesses
- Creation of business models: biogas, solar charge center, etc.
- Shelter: Private connections with intelligent/pre-pay electric meters



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## e) Engage all stakeholders

Beneficiaries: refugees and host community: Participation in the characterization, training, implementation and monitoring of the activities

University: itdUPM, broker/facilitator of the partnership: coordination of all stakeholders; promotion of the systematization and dissemination of the knowledge

### Local Authorities

- ARRA (Ethiopian Agency for Refugees and Returnees Affairs): facilitation of the surveillance of the Ethiopian regulations, knowledge of the context and security issues inside the camps
- EEU (Ethiopian Electric Utility), involved in design, training and facilitating of the works in the national grid since the beginning of the project

International Organizations: UNHCR (United Nations High Commissioner for Refugees), collaborating partner

### Civil Society Organizations

- NRC (Norwegian Refugee Council): implementing/operator partner, supporting with the logistic and implementation issues
- Ayuda en Acción-Jesuit Refugee Service: implementing/operator partner, supporting with the logistic and implementation issues
- IRC (International Rescue Committee): support with gender and protection issues
- NRDEP (National Rural Development and Environment Programme): support with environment issues

### Private companies

- Iberdrola: Technical support related to the installation and operation of the electricity grid
- Philips Lighting Spain: Technical support regarding street and indoor lighting technologies
- Fundación Acciona Microenergía: Technical support in solar technologies and business model

Public Agency: AECID, funding the project and supporting through the Humanitarian Aid Office and the Technical Cooperation Office in Ethiopia

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## **Case 3**

### **Philippines**

#### **Regional Development**

#### **Butuan City Regional Development Programme**

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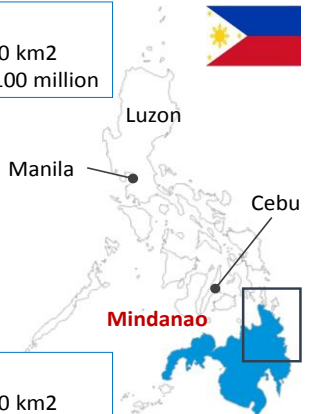
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Name of Project:	Butuan City Regional Development Programme (Butuan City, Mindanao, Philippines)
Name of Speaker:	Sam Tabuchi (kstabuchi@toyo.jp) Satoshi Kato (katou-sa@chodai.co.jp)
Public Organization:	Butuan City and its affiliated agencies
Private Organization:	Chodai Co., Ltd., Equi-Parco Construction Company & Twinpeak Hydro Resources Corp.

## Philippines

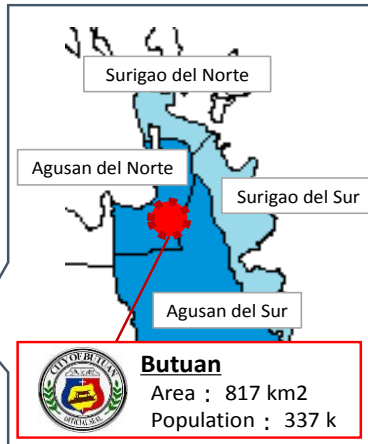
Area : 300,000 km2  
Population : 100 million



## Mindanao

Area : 100,000 km2  
Population : 22 million

Source : Wikipedia



Sam Tabuchi



TOYO UNIVERSITY



EQUI-PARCO CONSTRUCTION COMPANY  
General Engineering \* General Building



Twinpeak Hydro Resources Corporation



Satoshi Kato



CHODAI CO., LTD.  
CONSULTANT & SERVICE PROVIDER

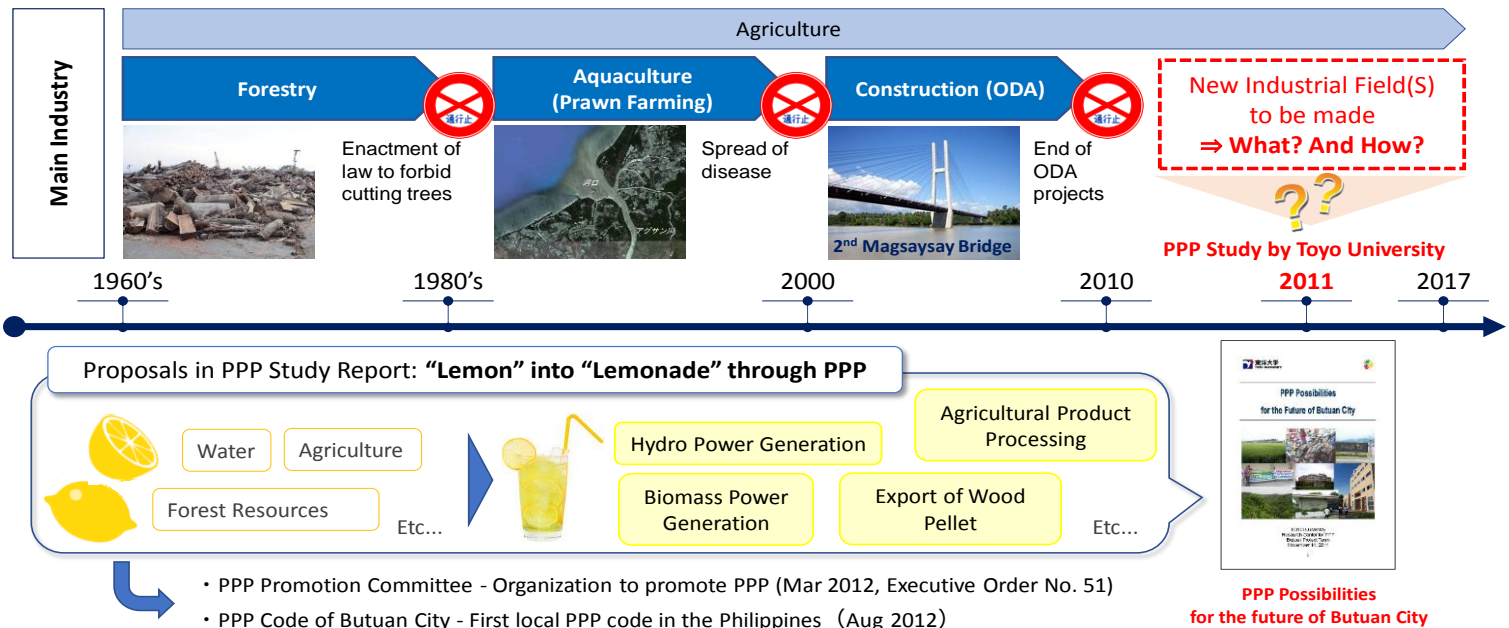
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## Background



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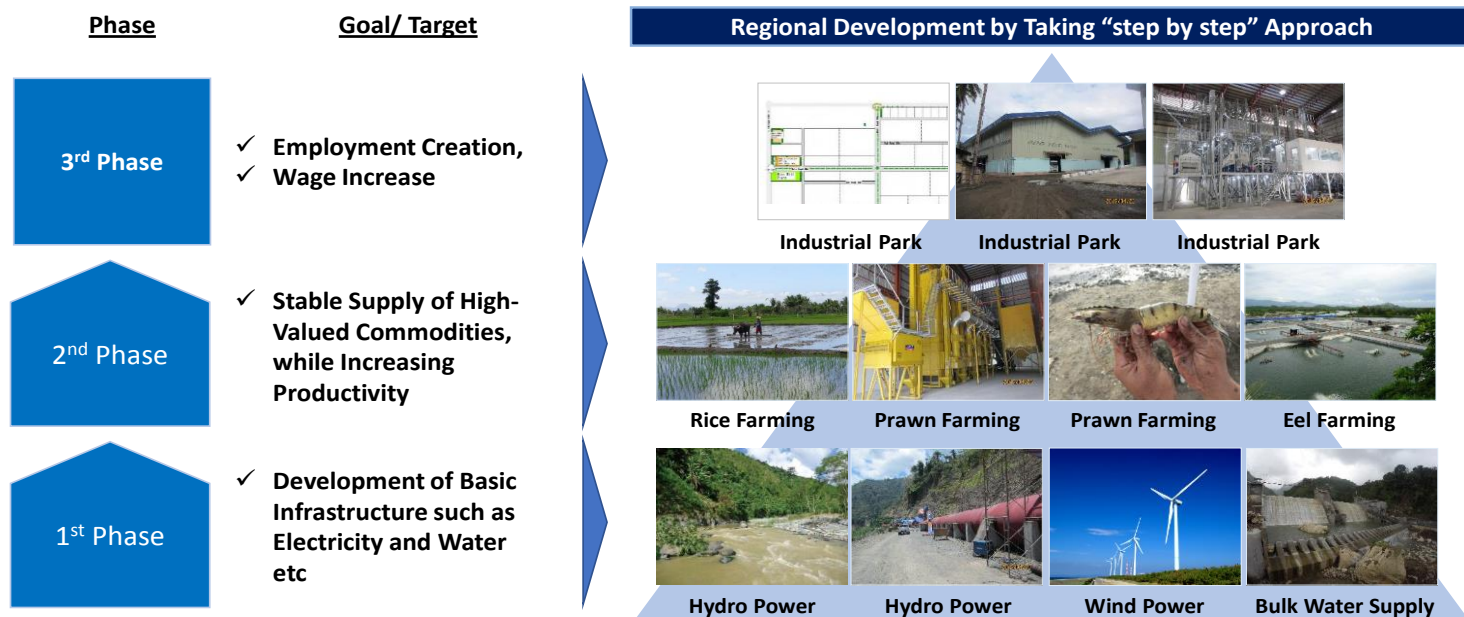
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Concept/ Target



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Feature

Features of Butuan Projects	
a) Increase access to essential services and promote equity	<ul style="list-style-type: none"> <li>✓ Access to stable power supply and clean water, trying to be established through the Phase-1 projects</li> <li>✓ Stable supply of basic infrastructure to increase QOL as well as to bring in other industries, achieving more employment creation</li> </ul>
b) Develop a resilient infrastructure and improve environmental sustainability	<ul style="list-style-type: none"> <li>✓ Renewable energy project(s) being prioritized</li> <li>✓ Involvement of Japanese companies with high eco-consciousness and advanced technology along a Japanese gov't policy of "High quality infra"</li> </ul>
c) Demonstrate the economic and financial effectiveness of the project	<ul style="list-style-type: none"> <li>✓ Support from Japanese gov't such as JICA, METI, JBIC etc for feasibility study and loan provision, improving project economics</li> <li>✓ Portfolio effect, with less risk, brought by several bundled projects conducted simultaneously</li> <li>✓ All projects promoted under private sector initiative (profit-driven and then self-supported): sustainable without rely on support</li> </ul>
d) Be replicable and scalable	<ul style="list-style-type: none"> <li>✓ All projects on region level (local gov't level): project size is relatively small for many players to join</li> <li>✓ Target: Regional development by job creation for &amp; with local communities</li> </ul>
e) Engage all stakeholders	<ul style="list-style-type: none"> <li>✓ MOUs signed among parties across countries (Japan-Phil) and across sectors (public, private and academic)</li> <li>✓ All stakeholders, especially private, with long term commitment</li> <li>✓ Good circulation of "many stakeholders bring more stakeholders"</li> </ul>

**SDGs**



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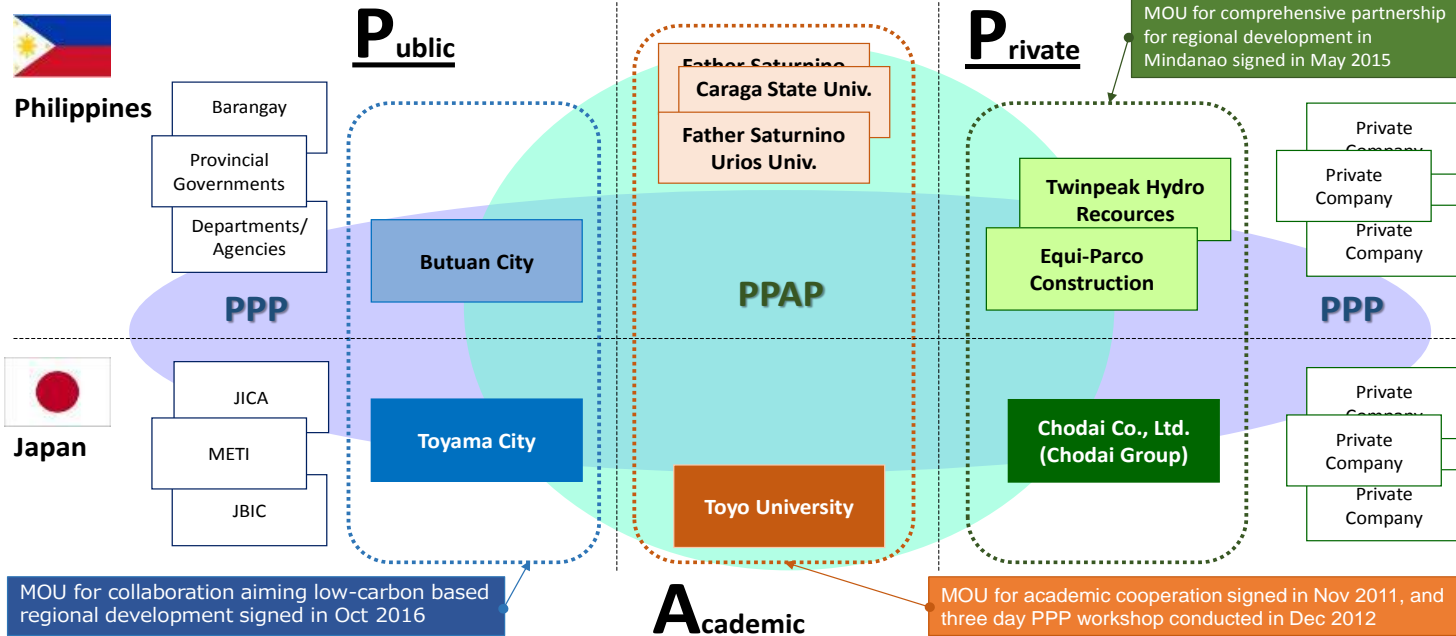
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## Structure



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## Partnership across Country & Sector

30 Jun 2016: Mr. Lagnada inaugurated as Mayor



### 10 Priority Impact Projects

- 1) Bright Butuan;
- 2) Clean Butuan;
- 3) Orderly Butuan;
- 4) Progressive Barangays;
- 5) People-friendly City Hall;
- 6) Excellent-Driven City Hall;
- 7) Clean Water;
- 8) Fast and Efficient Licensing in Butuan;
- 9) Transparent City Hall;
- 10) Save Butuan.

11 – 13 Aug 2016: Toyama city official visited Butuan



In Oct 2016: Toyama and Butuan Inter-city Cooperation commenced

Toyama and Butuan entered into an MoU, together with private companies, for inter-city cooperation and exchange in the "UN CoE Local Governments Network Event" held by Toyo University.



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## Investment

	Project	Overview	PJ Cost (PHP)	Status
1 <sup>st</sup> Phase	Asiga river Hydro	8MW/ Run-of-river type	1,200 Mil	Under Construction
	Taguibo river Hydro	5MW/ Run-of-river type	750 Mil	Pre-FS done
	Wawa river Hydro	23MW/ Run-of-river type	4,000 Mil	FS done
	Biomass Power	2MW/ Rice husk type	429 Mil	Pre-FS done
	Wind Power	150MW (2MW×75)	13,648 Mil	Pre-FS done
	Bulk Water Supply	Capacity upgrade to 80k m3/day	565 Mil	Under Operation
2 <sup>nd</sup> Phase	Agriculture	Rice Farming & Milling	Non public	Under Operation
	Aquaculture	Prawn Farming	Non public	Pre-FS done
		Eel Farming	Non public	Under Operation
3 <sup>rd</sup> Phase	Industrial Park (SEZ)	Development area: 140ha	3,562 Mil	Pre-FS done
Total			Php 24,154 Mil	(USD 503 Mil)

Annual budget level in Butuan City: Php 1,500 Mil ⇒ Estimated budget for public works \* = **Php 300 Mil (USD 6.24 Mil)**

\* On national level, approx. 20% of the total budget is spent for public works in the Philippines

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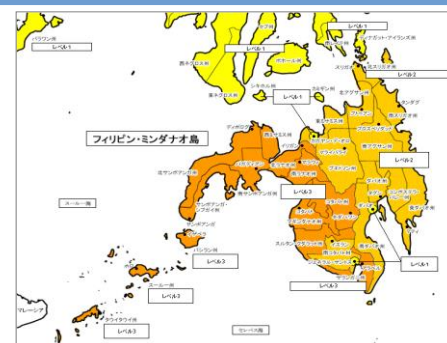
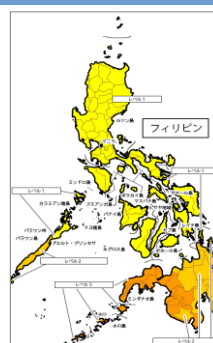
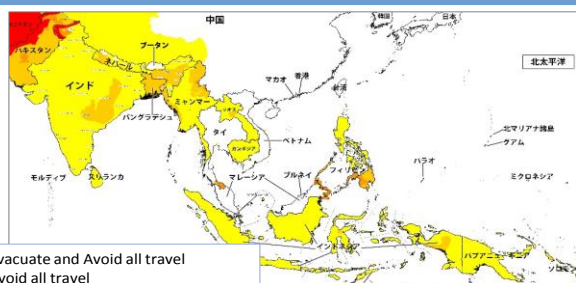
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## Significance – Replicability & Contribution to Regional Development



- ✓ FDI (Private investment) into Mindanao has been weak, given the relatively high security level, as rated by Ministry of Foreign Affairs of Japan
- ✓ International assistance/ aid to Mindanao is limited, so more private investment therein should be inevitable for sustainable development
- ✓ If this Butuan project goes well, then this could be spread out across other cities in Mindanao as a **“model for regional development”**

### Feature of Butuan project model

- 1) “Same partners” work together for “multiple projects” simultaneously in the “same area”
- 2) Local based partner(s), well motivated for development of their area, is involved
- 3) All the stakeholders share a common goal of “regional development” upon a base of “long term.”

**“People-First PPP”**

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## **Case 4**

### **Ukraine**

#### **Port Sector**

#### **PPP Kherson Port & Lower Dnieper River**

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<b>Project:</b>	<b>PPP Kherson Port &amp; Lower Dnieper River</b>
<b>Project Proponent:</b>	Kherson Sea Commercial Port (KSCP)
<b>Project Organization:</b>	Administration of Sea Ports of Ukraine

**Public Organization:** the Ministry of Infrastructure of Ukraine with support of the World bank

**Private Organization:** Developer of the Project – Royal Haskoning DHV

**Capital Providers:** Private Investor & Global Infrastructure Facility

## Why the Project is a Case Study for People First PPPs:

Port shipping is an important component of physical infrastructure. The Project will allow developing a high quality, reliable, sustainable and resilient cargo transportation in Ukraine. Modernization of Sea Port of Kherson will result in development regional and trans border infrastructure, economic development and human well-being as in Kherson city and in other cities of Ukraine, facilitation of export of grain, metals, break bulk etc.

The main social impact of the Project is creating opportunities for development of agricultural business in Ukraine and, as result, increasing employment in this field.

The Project will have significant ecological effect as a results of energy efficiency, transition to the use of electricity instead of diesel fuel, providing safety transportation of grain and other food products



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<b>Where:</b>	Kherson city, Ukraine, 135.7 sq.km, 300 thousand population, the key economic sectors: mechanical engineering, food production
<b>Why:</b>	Ukraine has a high potential for export of grain and other crops. The current throughput of Kherson Sea Commercial Port (KSCP) is 1.7 million tons. As a result of the Project implementation the throughput could increase in 1.8 – 2.9 times. Strengths of the Project: good location (connection to river and Black Sea; largely ice-free navigation, spare capacity available, established port infrastructure & services, easy to remove bottlenecks (lack of storages etc.), opportunities to improve efficiencies. PPP solution is considered as a mechanism of attracting financial resources and knowledge transfer.
<b>What:</b>	the Project will create opportunities to increase Ukrainian export of grain and other crops as well as employment in agricultural and transport sectors of Ukraine by using local supplies, and local companies and promoting local jobs
<b>Who:</b>	Initiator of the Project is the Ministry of Infrastructure of Ukraine. The Project preparation is supported by the World Bank via Global Infrastructure Facility. It is being discussed with representatives of the Ministry of Economic Development and Trade, Association Ukrainian Logistics Alliance, Administration of River Ports, Ukrainian Sea Port Authority, Kherson City and Kherson Regional Administration, representatives of private business and their associations.
<b>When:</b>	Final decision regarding the Project implementation is planned to be taken at the beginning of 2018. Construction start date is planned for 01.01.2019. Operation start date - 01.01.2020. Term of concession – 15 years.

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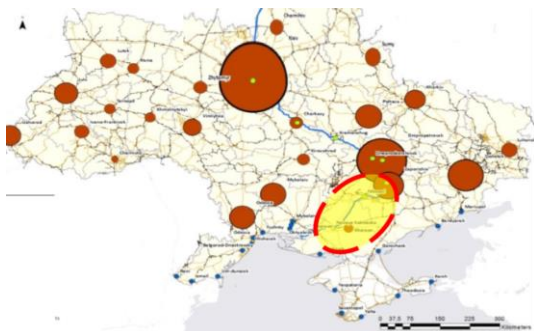
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## a) Increase access to essential services and promote equity



### Social impact of the Project

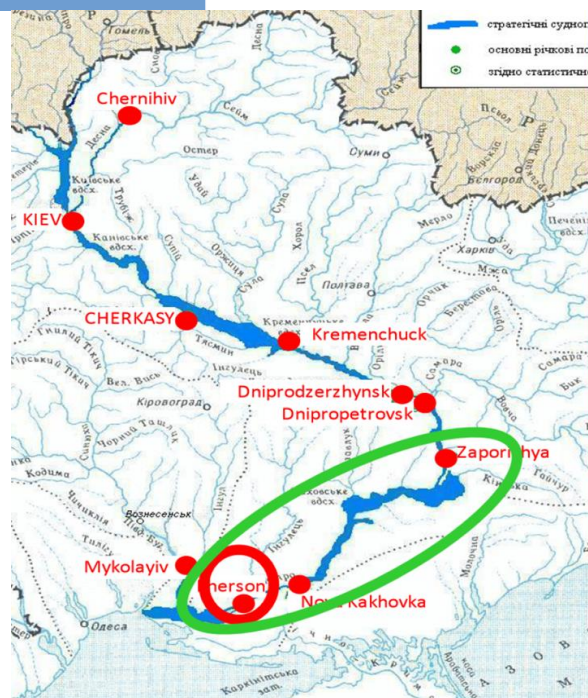
Creating access to transport infrastructure in Ukraine, developing agricultural and other local products export, increasing employment, improving the quality of life

### Social risks:

- Staff redundancy
- Traffic in Kherson city
- Land use (future)

In the framework of the Project it would be necessary to provide social compensation of KSCP staff redundancy through:

- professional training
- financial compensations



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## b) Develop a resilient infrastructure and improve environmental sustainability

KSCP handles a mix of cargoes: grain, metals, break bulk, etc.

Cargo flows could increase for all commodities – in accordance with different scenarios in 1.8 – 2.9 times. Grain is a very promising commodity – a lot of various stakeholders in Ukraine are interested in the Project implementation.

The Project will create sustainable long term infrastructure ensuring environmentally friendly and safe transportation of grain and other food products.

### Scenarios:

- Mixed cargo port: Grain high + other cargo medium
- Mixed cargo port: Grain high + metal high + other cargo low
- Specialized port: Grain only

For all scenarios it is necessary to mitigate the key risks concerning air & water quality and to increase energy efficiency through:

- Proper design
- Adequate construction practices
- Introduction of "state of the art" techniques

### Scenario A



### Scenario B



### Scenario C



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## c) Demonstrate the economic and financial effectiveness of the project

### Preliminary Economic Evaluation: Summary of results

	Scenario A	Scenario B	Scenario C
EIRR	46%	48%	41%
NPV (million UAH)	1,757	1,488	1,302
NPV (million USD)	65.4	55.4	48.4
B/C-Ratio	2.90	2.99	2.29

### Preliminary Financial Evaluation: Assumptions of the financial model

Operations start date: 1.01.2020

Duration of concession: 15 years

Financing (mixed with MDB) financing:

Gearing: 50%

Loan tenure: 8 years

Interest rate: 10%

Corporate tax rate: 18%

Terminal handling fees:

Cereals: 5.50 USD/ton

Building materials: 5.17

USD/ton

Fertilizers: 7.08 USD/ton

CAPEX phasing:

Year 0: 70%

Year 5: 20%

Year 10: 10%

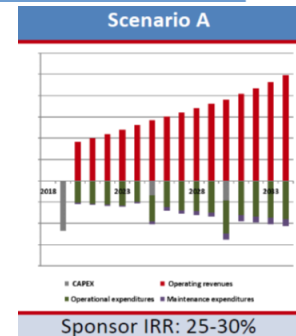
Indexation:

CAPEX & tariffs: 5%

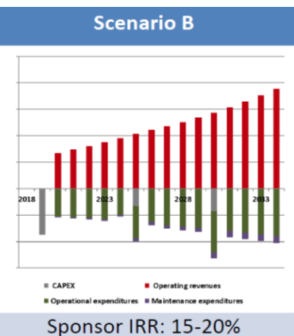
OPEX: 3.75%

**Source of the Project Financing:** Private Partner equity, EBRD, EIB, WB

**Business Model:** Most appropriate contractual model = BOT/Concession agreement; "Demand-Risk" based contract for private bidder; Freedom for private sector to define the nature of terminal business; The use of the berth/quay wall is included in the concession



Sponsor IRR: 25-30%



Sponsor IRR: 15-20%



Sponsor IRR: 10-15%

### Preliminary conclusions

- Each scenario is a viable proposition;
- No scenario stands out
- Slight preference for Scenario A (mixed cargo port) based on NPV.

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## d) Be replicable and scalable

One of the tasks of the Project implementation is piloting and developing a methodology of implementing PPP based port projects in Ukraine

The Project is less expensive and less complicated than other potential port projects (**Odessa, Mykolayev, Chernomorsk, Yuzhnyi**).

The World Bank and European Bank of Reconstruction and Development actively participate in the Project preparation and capacity building activities (by conducting trainings for local public authorities and promoting PPP mechanism in the society). The team involved in the Project preparation process consists of representatives of IFI, the Ministry of Infrastructure of Ukraine, the Ministry of Regional Development and Trade of Ukraine, local authorities, foreign & local consultants

### Regional impact

The Project could be very useful for other developing economies.

The methodology to be applied in the framework of implementation of the Project could be replicated in the countries with low institutional capacity of public authorities, lack of trust to private business participation in infrastructure modernization among the population, especially poor people.



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## e) Engage all stakeholders

**Central Governments:** the Ministry of Infrastructure, the Ministry of Economic Development and Trade

**Local Governments:** Kherson City Administration, Kherson Oblast Administration

**IFI / Capital Providers:** World bank, European Bank of Reconstruction and Development, Global Infrastructure Facility

**Project Developers:** Royal Haskoning DHV, INFORMAL, JURIMEX, REBEL, CTS (Center for Transport Strategies)

**Private sector:** Cargo owners, Freight forwarding companies, Private transport operators, Stevedoring companies, Container liners

**Industry associations:** Ukrainian Logistic Alliance,

**Universities / Academies:** Academy of Public-Private Partnership

**Professional Unions:** Port Professional Union

**Civil Society:** Local NGOs

## **Case 5**

**United States of America**

**Disaster Recovery**

**PPP for Temporary-to-Permanent Housing in Disaster  
Recovery**

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Project:	PPP for Temporary-to-Permanent Housing in Disaster Recovery
Project Proponent:	International PPP in Resilience Specialist Centre, Inc.
Project Organization:	Private Non-Profit

**Public Organization:** U.S. Department of Housing and Urban Development, Texas General Land Office

**Private Organization:** A partnership of the Community Development Corporation of Brownsville, the Building Communities Workshop, TexasHousers, Hazard Reduction and Recovery Center at A&M University, La Unión del Pueblo Entero, and A Resource In Serving

**Texas Equality (ARISE)**

The Ford Foundation also provided a grant for assistance in developing the model

**Capital Providers:** Community Development Financial Institutions, Commercial Banks

**Why is this project a Case Study for People First PPPs: A Best Practice in Disaster Recovery/Resilience utilizing PPP**

The RAPIDO program offers solutions to disaster recovery and resilience, creating a bottom-up community based approach that is centered on the families it intends to support. The design process examines not only architectural issues, but every level of process, specifically the social, economic, and political contexts that make up a disaster scenario. RAPIDO evaluates and redesigns the entire process with the people that are impacted most.

RAPIDO addresses the following Sustainable Development Goals:

Goal #3 (healthy lives)

Goal #9 (resilient infrastructure)

Goal #11 (resilient cities)

Goal #13 (combat climate change impact)

Goal #16 (inclusive, access, effective institutions)

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<b>Where:</b>	The pilot project was developed in the Rio Grande Valley in the U.S State of Texas, an impoverished region on the border with Mexico.
<b>Why:</b>	Hurricane Dolly, a category 2 cyclone/typhoon, caused widespread flooding, particularly in low-to-moderate income neighborhoods, where pre-disaster housing was already inadequate. A group of concerned civic leaders and non-profit organizations worked with affected citizens to develop a new approach based on a temporary shelter (core) that could be easily expanded into a quality affordable home. Utilizing pre-assembled components for the core provided significant cost savings, proved very resilient (can withstand hurricane strength winds) and allows additional rooms to be added in converting the shelter into a quality affordable home. The PPP solution was chosen because the U.S. Federal Government's policy is not to fund permanent home construction for temporary shelter. The core unit is not considered a permanent home; however, utilizing a case management system to provide private financing and construction, the units were able to be converted into permanent homes.
<b>What:</b>	Applying this successful concept to flood-ravaged Louisiana, which lost an estimated 60,000 affordable homes in 2016, could provide a significant improvement in quality of life for low-income survivors. This is critical in the context that, 10 years prior to the floods, Louisiana lost 250,000 affordable homes to storms and decay.
<b>Who:</b>	Private: A partnership of non-profit organizations led by Better Communities Design Center, Texas Housing and the Community Development Corporation of Brownsville, both organizations dedicated to providing decent housing for low income citizens. Other members include labor rights organization La Union del Pueblo Entero, latino assistance organization ARISE, the Hazard Reduction and Recovery Center at Texas &M University, and the Texas Low Income Housing Information Service. Public: U.S. Department of Housing and Urban Development and Texas General Land Office.
<b>When:</b>	On April 19, The Texas State Senate Committee on Intergovernmental Relations approved a bill to expand the program statewide, and the State of Louisiana is considering adopting the program in partnership with private philanthropic organizations for ongoing recovery from August 2016 floods.

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## a) Increase access to essential services and promote equity

The project, applied in Louisiana, will increase access to affordable quality housing for victims of the 2016 Louisiana Floods. Over 200,000 homes were destroyed, approximately 30% of which were classified as “affordable”, or priced at less than US\$100,000. These 60,000 homes added to the 250,000 lost within the ten years prior to the floods have created a crisis in affordable housing. Many homes destroyed were sub-standard, unhealthy, and dangerous, particularly mobile homes that cannot withstand strong winds. The RAPIDO model provides a strong, decent temporary shelter, priced at approximately US\$25,000, assembled on site, that can later be converted either on site or disassembled and moved to a new site, that may be expanded to create a high-quality affordable home for less than a total, including the temporary unit, of less than \$100,000 (the average cost in pilot project conversion totaled US \$86,000 including the core). After use as a temporary shelter, the core unit may be donated to a non-profit that, in turn, donates the unit to survivors. Using a case management system, families will work with design and building professionals to create their own home using the core unit as a base, learn about credit and mortgage financing if they had never owned a home, and work with Community Development Financial Institutions to obtain financing for the conversion. Those who cannot obtain financing may choose to rent, and agreements may be structured to apply a portion of their rent to eventual ownership. Providing access to safe, affordable housing that may be raised if in flood-prone areas, is resilient, and provides families with better health, including overcoming the trauma associated with disaster, and promotes social justice through providing an opportunity to improve their financial standing with a transferable asset and a safe, welcoming environment. Utilizing the Public sector in PPP provides the basis for social justice and make essential services accessible to all without restriction on any grounds such as race, ethnicity, religion, or orientation, as those requirements can be built into the donation process.

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## b) Develop a resilient infrastructure and improve environmental sustainability

This project develops a resilient infrastructure in three ways:

1. The design of RAPIDO housing, which allows inexpensive elevation in flood-prone areas, can help prevent urban sprawl.
2. The core unit is able to withstand hurricane force winds, and all construction techniques were developed to provide resilience (for example, “hurricane clips” are used to prevent roof damage)
3. Utilizes wood, a renewable resource, rather than steel or concrete lowers the carbon footprint and may allow the use of local wood products (soft-wood trees which grow much faster-no rainforest wood)

RAPIDO emphasizes redefining the recovery system to make it more efficient and effective. Policy changes to encourage more sustainable recovery options are encouraged, such as redevelopment of impacted neighborhoods and rural areas rather than new “greenfield” development and the fiscal and environmental costs associated with new development.

The RAPIDO design allows for assembly of components in 4 days, and construction of the core unit from those components in 3 days. The rapid model can shorten time to put families back in their home from years to months, even weeks. Flexibility, choice, and empowerment are hallmarks of the RAPIDO model. It is truly a PEOPLE FIRST PPP initiative.

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## c) Demonstrate the economic and financial effectiveness of the project

The project is financially sustainable, and private sector financing entities will be provided with a fair market rate of return commensurate with the risk taken. In the United States, a specific type of institution, Community Development Financial Institutions, are non-bank lenders who raise capital based on their ability to successfully lend to low-to-moderate income populations and/or areas. These institutions will be utilized to provide funding for permanent conversions in Louisiana. Thanks to the case manager “navigators”, who themselves are trusted members of the community, families were informed in how to finance a home, make family budgets, and other knowledge to lessen risk for them, and the institutions that provide financing to them.

Using local labor and supplies will benefit private sector partners in affected communities. Funding used for construction and assembly of both core units and permanent homes will stay in the communities, versus manufactured homes that are usually shipped in from other places. Private landowners may benefit if their properties are used as sites for temporary-to-permanent development for families who did not have a home prior to the disaster, or who decide not to rebuild on disaster-vulnerable property. Pre-procurement arrangements with local suppliers will greatly aid in the ability to “scale” the system in case of widespread home damage. In addition, the model is also being considered for small businesses and community organizations that may sustain building losses.

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## d) Be replicable and scalable

The RAPIDO process can be replicated in any country. The primary issues to enable replication are funding for conversion from temporary to permanent conversion, capacity to produce components, and development of an effective case management system.

It is transferable to other sectors. Discussions are underway to utilize the same model for temporary-to-permanent structures for small businesses, non-profit organizations, and local/provincial public entities. In addition, construction of components for and assembly of the core units and expansions to permanent housing will create jobs and utilize a value-added renewable resource, wood, that will stay in the country where grown rather than be exported wholesale, using sustainable forest practices.

The project is scalable, and assuming the Louisiana project is implemented, will be scaled to eventually enable the production of thousands of units for both ongoing recovery and in preparation for inevitable future weather-related events.

Management of the pilot project have openly and freely shared their process, held a day-long training session with those working on Louisiana recovery, and a webinar on specific issues. They are willing to share their designs and specifications upon commitment that they will not be exploited for profit at the expense of vulnerable people and that core units will always be converted to permanent homes, even if the unit itself is not expanded.

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## e) Engage all stakeholders

The partnership approach, including advocacy organizations such as labor rights organization La Union del Pueblo Entero and latino assistance organization ARISE assured stakeholder involvement, and the case management system ensured that all stakeholders were not only heard, but accommodated as much as possible.

Each organization and agency filled a necessary role in ensuring the success of the pilot Project.

1. Building Communities (bc) workshop, a Texas non-profit, provided overall leadership of the pilot project
2. The Community Development Corporation of Brownsville served as a liason with local officials and neighborhood groups
3. Texas Low Income Housing Information Service worked with bc workshop on design and development of the RAPIDO model
4. Hazard Reduction and Recovery Center at Texas A&M University advised on resilient design and served as a
5. La Unión del Pueblo Entero worked to ensure fair and equitable treatment of workers involved in the program
6. A Resource In Serving Equality (ARISE) served as an advocate for families and individuals throughout the project
7. U.S Housing and Urban Development provided funding to the state of Texas General Land Office through the Community Development Block Grant Disaster Recovery Program
8. Texas General Land Office Community Development and Revitalization Program allocated Communiuty Development Block Grant Disaster Recovery Program funds for the RAPIDO pilot project