

第五届广州国际城市创新奖入围城市 案例汇编

A COLLECTION OF SHORTLISTED INITIATIVES OF
THE 5TH GUANGZHOU INTERNATIONAL AWARD FOR URBAN INNOVATION



南方财经全媒体集团
South China Omnimedia Corp
广州国际城市创新研究会
Guangzhou Institute for Urban Innovation

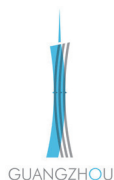


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奥地利 维也纳
Vienna, Austria

维也纳儿童和青年计划

Werkstadt Junges Wien



城市基本信息

人口规模：1,897,491
人口增长率 (%)：1.30
面积 (平方公里)：41,487
人口密度 (人 / 平方公里)：4.57
人均国内生产总值 (美元)：58560
基尼系数：0.27
支柱产业：贸易、服务业

BASIC CITY DATA

Population size: 1897491
Population Growth Rate (%): 1.30
Surface Area (sq.km): 41487
Population Density (people/sq.km): 4.57
GDP Per Capita (U.S.\$): 58560
GINI Index: 0.27
Main Source of Prosperity: trade, service industry

摘要

维也纳历史上最大的儿童和青年参与项目涉及 22,000 多名年轻居民。该项目的主要目标是根据儿童和青年的专业知识和现实情况，制定一项跨部门的维也纳儿童和青年计划。年龄在 4 到 19 岁的维也纳当地居民均可受邀参与，与其他类似项目不同的是，参与者可以真正自由地制定议程并决定优先事项。参与者在做出选择后，专家们才应邀对结果进行补充。社会科学研究所负责分析整个参与过程中收集到的信息，帮助我们确定与儿童和青年相关度最高的九个主题。2020 年 6 月 24 日，维也纳市议会通过了第一个跨部门儿童和青年计划，其中规定每个主题指定一个基本目标和 193 项具体措施。

背景

通过维也纳儿童和青年计划项目，我们根据儿童和青年表达的愿望、建议和优先事项，制定了涵盖九个主题领域、193 项具体措施的策略。该策略得到了维也纳市议会的同意，从而成为对整个城市具有约束力的承诺。维也纳儿童和青年委托市政府开展这一独特的项目，以根据他们的需求进一步改善城市。

起源

2018 年，几乎五分之一的维也纳公

Abstract

The largest participation project with children and young people in Vienna's history involved more than 22,000 young residents. The main objective was to create a cross-sector Children and Youth Strategy for Vienna based on the expertise and the realities of children and young people. Everyone between 4 and 19 years living in Vienna was invited to participate and - unlike other similar projects - they were truly free to set the agenda and decide on priorities. Only after they made their choice, experts were invited to add on to the results. Inputs gathered throughout the participation process were analyzed by a social science institute, which helped us to identify the nine most relevant topics for children and young people. On 24th June 2020, the first cross-sector Children and Youth Strategy, which stipulates one fundamental goal per topic and 193 specific measures, was adopted by the Vienna City Council.

Background Information

Through Werkstatt Junges Wien, we have developed a strategy with 193 specific measures in nine thematic areas, based on the expressed wishes, suggestions and priorities of children and young people. This strategy was agreed upon by the Vienna City Council and thus is a binding commitment for the whole city. The Viennese children and young people have commissioned the city government in this unique project to further improve the city according to their needs.

Origins

In 2018, almost every fifth Viennese citizen was under 19 years old.

民年龄在 19 岁以下。在过去 50 年里，维也纳从一个人口不断萎缩的老龄化城市发展成为一个年轻且人口不断增长的都市。现在，是时候仔细倾听儿童和青年居民的声音，了解他们想象中这座城市 20 年或 50 年后的样子。维也纳是一个不断发展的城市，2019 年维也纳 29.5% 的投票年龄人口由于没有奥地利国籍而不能投票，因此，很有必要为每个人创造参与投票的机会。

鼓励儿童和青年以积极的方式亲身体验民主，让他们知道其观点和想法至关重要，这创造了一种自我效能感。在维也纳，小规模参与性项目在时间和内容上有局限性，比如项目或重新设计工程（如运动场）的预算太少。但通过维也纳儿童和青年计划项目，该城市旨在制定更加结构化、长期性和大规模的方法，把所有在维也纳生活、成长的儿童和青年纳入社会，作为政策制定和城市管理的核心。

该项目的总体目标是使维也纳成为世界上对儿童和青年最友好的城市。该目标十分宏伟，幸运的是，很多人对此表示了兴趣，并愿意为实现这一目标作出贡献。考虑到参与者提出的愿望和关切，所有维也纳居民都将受益于通过“维也纳儿童和青年计划”执行的措施。

我们已经体会到该计划的一个好处——作为成年人，我们知道从对话和合作中可以学到许多东西。该项目不仅赋予儿童和青年权力，也赋予了城市政府和行政当局权力。起初，我们想让儿童和青年思考自己的城市，但最终，这座城市也在思考着这些儿童和青年。这创造了超越传统民主观念的全新意识。

在这个创新过程中（下文将进一步阐述），各个年龄阶段、背景的儿童和青年能够参与到这个过程。在 1,309 次研讨会中，共有 22,581 名儿童和青年自由表达了自己的想法，让我们有机会激发他们巨大的潜力。

Over the past 50 years, Vienna has developed from a shrinking and aging city into a young and growing one. It was about time to listen carefully to children and young people and ask them how they imagine the city in 20 or 50 years. In a growing city, where in 2019, 29.5% of the voting-age population are not allowed to vote due to the lack of Austrian citizenship, it is crucial to create meaningful participation opportunities for everyone.

Enabling children and young people to experience democracy in a positive, hands-on way by showing them that their opinions and ideas matter, creates a feeling of self-efficacy. Small-scale participation offers that are limited in time and content, such as micro-budgets for projects or local re-design processes e.g., of a playground, of course, exist in Vienna. However, with Werkstatt Junges Wien the city is aiming for a more structural, long-term and large-scale approach. The objective is to put social inclusion of all children and young people living and growing up in Vienna at the heart of policy-making and city administration.

The overall goal is to make Vienna the most child- and youth-friendly city in the world. This is an ambitious goal and we are lucky that so many of them showed their interest and, above all, readiness to contribute to reaching that aim. Looking at the wishes and concerns they raised, all residents of Vienna will benefit from the measures implemented through the Vienna Children and Youth Strategy.

We have already seen one benefit of the process - we have experienced how much we as adults can learn from dialogue and collaboration. It did not only empower children and young people, it also empowered the city government and administration. At first, we wanted children and young people to think about their city, but in the end, the city is now thinking about children and young people. There is an entirely new awareness that goes beyond the conventional ideas of democracy.

The innovative process (described further below) enabled children and young people of all age groups and backgrounds to connect to the process. In 1,309 workshops 22,581 children and young people freely articulated their ideas, which allowed us to raise enormous potential.

1,309 workshops with 22,581 children and young people were held by approximately 1,000 educators, youth workers, teachers and volunteers. By relying on existing relationships of trust, it was possible to include children and young people with diverse backgrounds. This result was achieved mainly through engaging all relevant stakeholders right from the beginning and

迄今约有 1,000 名教育工作者、青年工作者、教师和志愿者为 22,581 名儿童和青年举办了 1,309 次研讨会。凭借现有的信任关系，该项目可将不同背景的儿童和青年纳入其中。为实现该目标，我们一开始就让所有利益相关者与幼儿园、学校、青年工作、青年组织、特殊需求利益团体和城市各部门建立伙伴关系。

维也纳儿童和青年计划为编制协助材料、分析结果和编制政策文件提供了预算。合作伙伴投入了大量的工作时间，帮助推动了这一过程，促进研讨会、报告结果、收集所有 9 个主题的措施和支持这一想法的许多其他行动。因此，可以说“维也纳儿童和青年计划”是真正由整个城市共同创建的成果。

创新

维也纳儿童和青年计划是一个革命性的项目，因为这是维也纳历史上最大的儿童和青年参与项目。儿童和青年不仅可以第一次表达个人意见，而且真正自由地制定议程及决定优先事项。参与者做出选择后，专家们才应邀请对结果进行分析和补充。策略制定往往先由专家们制定大纲，然后参与者进行讨论。但我们以儿童和青年的需求和愿望为指导，这也是该项目唯一的可行方式，因为政界人士已准备让儿童和青年领导项目，并接受所有结果。

维也纳首次集合各个政策领域、部门 and 全市企业的努力，以共同愿景为目标，将维也纳市打造成为一个对该市所有儿童和青年更友好的城市。一些部门需要学习如何应对年轻的目标群体，积累经验。

当然，该项目也有逐步演变的方面，因为目标是把人置于所有政策制定的中心。智慧城市维也纳框架战略等长期规划为这一发展提供了必要的保障。

成效

我们制定了一项策略，涵盖 193 项具体措施，涉及对儿童和青年最为重要的

entering into partnerships with kindergartens, schools, youth work, youth organizations, special needs interest groups and diverse departments of the city.

Werkstadt Junges Wien had a budget for the development of facilitation material, the analysis of results and the production of strategy documents. But there was an immense amount of working hours invested by partners, who helped in promoting the process, facilitating workshops, reporting results, collecting measures for all nine topics and many other actions that supported this idea. Therefore, we can say that the Vienna Children and Youth Strategy was truly co-created by the whole city.

Innovative aspects

Werkstadt Junges Wien was a revolutionary initiative since it was the biggest participation project with children and young people in Vienna's history. It was also the first time that children and young people not only could have their say, but were truly free to set the agenda and decide on priorities. Only after they made their choice, experts were invited to analyze and add to the results. Strategy development processes often start with an expert outline, which participants can then comment on. We started with the needs and wishes of the youngest residents, which was only possible because politicians were ready to give them the lead and accept the outcome.

Vienna is for the first time bundling efforts from all policy areas, departments and enterprises of the city and aligning them with the shared vision of making the City of Vienna a better place for all children and young people who live in the city. Some Departments need to learn and gain experience on how to address younger target Groups.

There certainly is also an evolutionary aspect to this project since Vienna aims at putting people at the center of all policy development. Long-term plans such as the Smart City Wien Framework Strategy provide necessary guard rails for this development.

Desired change or outcome

We have developed a strategy with 193 specific measures in nine areas that were most important to children and young people. The strategy has been adopted by the Vienna City Council and thus is a binding commitment for the whole city. It provides a clear road map for improvements to be made in the coming 5 years. The process brought about a new awareness for the interests



9 个领域。该策略已被维也纳市议会采纳，因此成为了对整个城市具有约束力的承诺。该策略为未来 5 年的城市进步提供了清晰的路线图。这一过程使城市管理部门对儿童和青年的利益有了新的认识。

目前，我们正为该策略中所述的 193 项措施实施一套监测系统，使政界人士、儿童和青年人均可跟踪项目进展，包括从新建饮水机的数量到学校参与式文化等各种各样的指标。我们的协调办公室团队将收集所有相关数据，并以方便儿童和青年的方式公开。

在上述检测系统的基础上，我们正在组建一个城市儿童和青年议会。该议会与城市儿童和青年宣传独立办公室共同承担监测策略执行情况的任务。项目中所确定的措施包括进一步促进儿童和青年持续参与的策略工具，例如通过青年主流化、制定青年预算编制或城市部门青年咨询委员会制度等。

在对各大利益相关者进行访谈后，咨询过程于 2019 年 2 月启动。我们采用了研讨会的方式以确保过程有利于儿童和青

of children and young people in all parts of the city administration.

We are in the process of implementing a monitoring system for the 193 measures described in the strategy, which allows not only politicians but also children and young people to track progress – the diverse array of indicators among others ranges from the number of new water fountains to a more participatory culture in schools. The team of our coordination office will collect all relevant data and make it public in a child- and youth-friendly way.

On top of the aforementioned monitoring system, we are installing city children and youth parliament that will share the task of monitoring the implementation of the strategy with the city's independent office of child and youth advocacy. Among the defined measures are some strategic instruments that further foster the continuous involvement of children and young people e.g. via youth mainstreaming, youth budgeting, or youth advisory board systems for city departments.

The consultation process was launched in February 2019 after holding extensive stakeholder interviews. A workshop concept was designed to ensure a child- and youth-friendly approach. All materials needed for the Werkstatt Junges Wien workshops were compiled in a toolbox that also contained a facilitator's guide. The toolbox was provided to schools, kindergartens, after-school care clubs, socio-educational group homes, adult education facilities,

年。维也纳儿童和青年计划项目研讨会所需的工作材料汇编在包含了引导者指南的工具箱中。该工具箱面向维也纳的各学校、幼儿园、托管所、社会教育团体之家、成人教育机构、青年组织和其他从事儿童和青年工作的协会。

没错，在年龄层面，该项目仅专注于儿童和青年。但在年龄段内却并非如此，该项目明确涉及生活在维也纳所有地区的全部儿童和青年。

共有 22,581 名儿童和青年参与 1,309 次研讨会，其中 51.7% 为男性，48.2% 为女性，0.1% 为其他人。

为残疾儿童和青年举办 56 次研讨会；
1,000 名利益相关者作为研讨会促进者积极参与项目；

全市 70 个部门和企业参与其中；

所有参与者及其家人和社区将从项目成果和执行措施中受益。

保持创新的措施

采用的“儿童和青年计划”旨在实现变革的可持续性，如儿童和青年主流化程序。后期工作主要涉及制定儿童和青年预算计划，并编制实践指南，以审查与儿童和青年有关的所有概算。

经验

当然，我们很乐意让其他城市效仿我们的做法，我们愿意分享我们在项目中学到的内容，反思不足之处，为其他有兴趣与其年轻居民进行这样对话的地区提供支持。我们提供英文版的教育材料和策略资料，可供免费下载和使用。我们目前在不同的场合分享我们的故事，希望以此激励更多志同道合的城市。

我们认为，所有现代大都市都应让市民不分话题、年龄和性别地参与到创新的解决方案中。为实现这一目标，我们需要建立政治意愿和跨机构的良好网络。确保这一要素后，我们用于处理目标群体的方法即可成功复制到其他目标群体。

youth organizations, and other associations working with and for children and young people in Vienna.

Yes, in terms of age - addressing only children and young people. Within the age cohort - no, it is explicitly meant for all children and young people living in all areas of Vienna.

1,309 workshops with 22,581 children and young people (51.7% male, 48.2% female, 0.1% other).

56 workshops for children and youth with disabilities

1,000 stakeholders participated actively as workshop facilitators

70 departments and enterprises of the city were involved

All participants, their families, and their communities will benefit from the outcome and the measures undertaken to implement the strategy.

Measures to sustain innovation

The adopted Children and Youth Strategy contains measures that aim at the sustainability of the changes such as the children and youth mainstreaming procedure. Further efforts will include the development of a child and youth budgeting scheme and preparing practice guidance for reviewing all budget estimates on their relevance to children and young people.

Learning aspects

We would, of course, be delighted if other cities followed our example, and we are ready to share our learnings from the project and reflect on the shortcomings to support others who are interested in entering into such a dialogue with their youngest residents. Our educational material and the strategy itself are available in English and can be downloaded and used for free. We are currently telling our story in various settings and hope to inspire and encourage many like-minded cities.

We think that all modern metropolises have to involve their citizens in creating innovative solutions – no matter what topic, age group or gender is to be discussed. It mainly needs political willingness and a good network across different institutions. Once that is ensured the method we used to address our target group can be replicated to other target groups.



项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 3：确保健康的生活方式，促进各年龄段人群的福祉
- ◆ 目标 4：确保包容和公平的优质教育，让全民终身享有学习机会
- ◆ 目标 10：减少国家内部和国家之间的不平等
- ◆ 目标 16：创建和平、包容的社会以促进可持续发展，让所有人都能诉诸司法，在各级建立有效、负责和包容的机构

(2) 《新城市议程》

为所有公民提供基本生活服务
确保所有公民机会均等且不受歧视
加强社会联系和支持创新、绿色倡议

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 3: Ensure healthy lives and promote well-being for all ages
- ◆ Goal 4: Ensure inclusive and equitable education and promote life-long learning opportunities for all
- ◆ Goal 10: Reduce inequality within and among countries
- ◆ Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions for all

(2) New Urban Agenda

Provide basic services for all citizens
Ensure that all citizens have access to equal opportunities and face no discrimination
Improve connectivity and support innovative and green initiatives

巴西 圣若泽杜斯皮尼艾斯

São José dos Pinhais, Brasil

黄热病优先监控和行动区域认定过程中的数字技术和社会参与

Digital Technology and Social Participation in Surveillance and Definition of Priority Areas and Actions for the Control of Yellow Fever in Brazil



城市基本信息

人口规模：265,000
人口增长率（%）：2.60
面积（平方公里）：946,435
人口密度（人 / 平方公里）：27,916
人均国内生产总值（美元）：7342
基尼系数：0.52
支柱产业：汽车、化工和食品行业

BASIC CITY DATA

Population size: 265000
Population Growth Rate (%): 2.60
Surface Area (sq.km): 946435
Population Density (people/sq.km): 27916
GDP Per Capita (U.S.\$): 7342
GINI Index: 0.52
Main Source of Prosperity: Automotive, chemical and food industry

摘要

黄热病大约在 1600 年传入巴西，并在亚马逊地区蔓延。其不规则扩散导致后期疫情爆发，使大量患者死亡。自 2017 年来，巴西经历了 80 年来最大的一次疫情爆发。黄热病原本属于动物传播类病种，但人类活动改变了环境，城市化侵入森林地区，给人类带来了染病风险。由于疫苗接种覆盖率低，政府需要确定控制和预防黄热病的优先区域。巴西的经验表明，非人类灵长类动物（NHP）比人类更早死亡，这是病毒传播的一个警告。圣若泽杜斯皮尼艾斯市政当局使用 SISS-Geo 平台实时监测非人类灵长类动物的经验表明，社会和卫生专业人员可生成战略数据，提前 2 个月确定优先接种疫苗区域，拯救了该地区数百万人的生命。

背景

巴西独特的卫生系统制定了人畜共患病监测战略和政策，其中包括中央、州和市以明确的方式进行协调。SSIS-Geo 技术得到了 2018 年巴西可持续发展目标奖的认可，最大限度地减少了国家因领土、有限资源和社会环境差异而面临的挑战。因此，政府可采取行动改善生活质量、保护物种，以及促进实现可持续发展目标和国家生物多样性行动计划和战略等其他利益。

Abstract

Yellow fever arrived in Brazil around 1600 and became endemic in the Amazon region. It irregularly disperses causing outbreaks and deaths. Since 2017, Brazil has been experiencing the biggest outbreak of the last 80 years. Despite their wild transmission, anthropic activities transform environments and urbanization invades forested areas, bringing risk to people. The dispersion to regions with low vaccination coverage generated the need to identify priority areas for control and prevention. The Brazilian experience shows that non-human primates (NHP) die before people, an alert of viral transmission. The experience of the municipality of São José dos Pinhais with the use of the SISS-Geo Platform for monitoring non-human primates (NHP), in real-time, showed that society and health professionals can generate strategic data for the identification of priority areas for vaccination, carried out 2 months in advance, saving millions of lives in the region.

Background Information

The Unique Health System in Brazil develops zoonosis surveillance strategies and policies which involve central, state and municipal coordination in an articulated manner. The use of SISS-Geo technology, recognized by the Official Brasil SDGs 2018 Award, minimizes national challenges faced by its territorial dimensions, limited resources and socio-environmental differences. Therefore it allows actions to improve the quality of life, the conservation of species, among other benefits that contribute to the SDGs and the National Biodiversity Action Plan and Strategies

Origins

起源

在实验室中，要收集动物和获取用于分析的生物样本，其根本在于识别死亡或患病动物的速度、其确切位置，以及发现死亡或患病动物的条件。所有这些后勤工作均基于普通人在野外、城市或农村地区发现这些动物的第一手信息。但是，这种信息的传播通常较慢，而且缺乏重点。而这些疾病有可能在附近、遥远地区甚至城市地区蔓延，使数百万人和物种面临患病风险。SISS-Geo 平台由此应运而生。移动数字技术的使用为包括低教育水平人群在内的人们提供了一个可供拍摄、提供信息和定位动物的工具。这些信息由相关主管部门实时发布，以便政府采取行动。在最近的黄热病爆发中，识别非人类灵长类动物对确认该病毒的传播区域变得至关重要。奥斯瓦多·克鲁斯基金会（FIOCRUZ）与虫媒病毒总协调（卫生部）及国家卫生秘书处携手合作，努力确保在实地执行该任务的卫生机构和社区采用 SISS-Geo 平台。当黄热病蔓延到巴西南部各州时，该项目开始收到巴拉那州提供的数百份 NHP 记录。在向管理者介绍 SISS-Geo 平台后，之前的培训数量成倍增加，实地的专业人士也开始自愿使用该平台。此后，该项目增加了几个城市的培训，为各州的卫生和环境部门建立了发放警报的专用信息流。这些记录为确定传播途径提供了方法，从而确定优先接种疫苗的地区以及病毒传播到各市镇的时间。通过这种方式，圣若泽杜斯皮尼艾斯市的卫生团队都参与其中，负责登记死亡动物，提高了信息和行动的质量。因此，在 2019 年 7 月至 2020 年 6 月期间，该州 123 例人类病例和 900 例非人类灵长类动物病例的死亡数量均为 0。该市的防疫表现为巴西树立了榜样。

在全球范围内，人们针对生物多样性对人畜共患病传播的重要性进行了多项研究，如与新病原体 and 旧病原体相关的传播。

The speed of identification of a dead or sick animal, its exact location, and the conditions in which dead and sick animals are found are fundamental for the proper collection of the animal and the collection of biological samples that can be analyzed in the laboratory. All of this logistics is based on the first information of a common person who finds the animal in the wild, in urban or rural areas. However, the flow of this information is generally slow and without the most important information. The risk of these illnesses arising in nearby distant or even urban areas can cause millions of people and species to risk. This is how the SISS-Geo Platform came about. With the use of mobile digital technology, it puts in the hands of people, including those with low education, a tool that allows photographing, providing information, and geo-referencing animals. This information, in real-time, is distributed by the competent sectors so that actions are taken. In the recent outbreak of yellow fever, the identification of NHP has become crucial for identifying areas of circulation of the virus. Fiocruz, in partnership with the General Coordination of Arboviruses (Ministry of Health) and the State Health Secretariats, had already been working to ensure that the SISS-Geo was adopted by health agents and communities who are in the field with this mission. When yellow fever spread to the southern states of Brazil, we started to receive hundreds of NHP records from Paraná State. The previous training sessions, when the SISS-Geo was presented to managers, were multiplied and professionals in the field started to use it voluntarily. From then on, training was intensified for several municipalities and we created exclusive information flows with alerts for the health and environmental sector of the states. The records were used to feed the methodology of the dispersion corridors, which allowed the identification of priority areas for vaccination and the time that the virus would take to reach the municipalities. In this way, the entire health team of São José dos Pinhais, a neighboring city in the state capital of Paraná, got involved and registered dead animals, adding quality of information and action that resulted in the period from July 2019 to June 2020 no death in the universe of 123 human cases in the state and 900 death of NHP. The municipality's commitment is an example to be multiplied for Brazil.

Worldwide, the importance of biodiversity for the transmission of zoonoses has been studied, such as those related to new and old pathogens. However, prevention and control are limited, frequently dependent on vaccines, and carried out after outbreaks or epidemics, compromising lives.

但疾病的防控措施十分有限，人们往往依赖于疫苗注射，然而疫苗都是在疫情或流行病爆发后才进行接种，这将危及患者的生命。该项目的目标是制定技术和参与性战略，让不同部门、各级政府和社会都参与进来，以生成高质量数据，指导和制定公共政策及行动，应对巴西出现的人畜共患疾病。

SISS-Geo 是由来自不同知识领域的数十名专家合作开发的免费软件，并在亚马逊和大西洋森林的传统社区和土著社区进行了测试。该系统已成为监测动物流行病的辅助工具，其记录的信息可作为预测模型的依据，使其能够实时预测和识别紧急情况，从而启动防控行动服务。

该项目最初由全球环境基金（GEF）资助，由环境部协调，旨在发展公私合营的生物多样性倡议项目（Public-Private Initiative Program for Biodiversity），将生物多样性保护纳入政府各个部门的工作中。现在该项目由奥斯瓦多·克鲁斯基金会资助，由国家科学计算实验室（LNCC）和卫生部共同负责。该项目致力于为社会、为巴西公共卫生系统和保护生物多样性而工作。

2017 年前，全球环境基金与系统开发人员共同合作，在亚马逊和大西洋森林的偏远社区测试 SISS-Geo 平台。从一开始，奥斯瓦多·克鲁斯基金会就计划与研究人员进行长期合作。国家科学计算实验室能够满足较大的计算处理需求。卫生部负责促进具体工具的开发工作，并与州和市一道进行整合和培训。社会各方参与记录健康和保护的数据。

创新

从数据输入到其他改进方面，SISS-Geo 的建设均有公民参与，使其在大多数信息系统中脱颖而出。这些数据对社会、研究人员和决策者开放。除了通过智能手机收集的数据外，SISS-Geo 平台还整合了研究人员的数据以及来自社会环境和地

Our goals are to develop technology and participatory strategies that involve different sectors and levels of government and society to generate quality data to guide and establish public policies and actions to face the emergence of zoonoses in Brazil.

SISS-Geo is developed in free software, with the collaboration of dozens of specialists from different knowledge and has been tested in traditional and indigenous communities in the Amazon and the Atlantic Forest. The system has become an auxiliary tool in the monitoring of epizootic diseases where the information in the records serves as input for predictive models, making it possible to anticipate and recognize emergencies in real-time, allowing to activate the services responsible for prevention and control actions

This initiative was initially financed by the Global Environmental Fund (GEF) for the development of the Public-Private Initiative Program for Biodiversity, coordinated by the Ministry of the Environment, to mainstream conservation in the various sectors of the government. Today, it is maintained by FIOCRUZ, counting on the partnership of the National Laboratory of Scientific Computing (LNCC) and the Ministry of Health. We work for the society, for the Brazilian Unified Health System and the conservation of biodiversity.

The GEF resources, until 2017, made up the team with system developers and made it possible to test the SISS-Geo in remote communities in the Amazon and Atlantic Forest. From the beginning, Fiocruz assumed its maintenance with researchers. The National Laboratory for Scientific Computing (LNCC) meets the demands of heavier computational processing. The Ministry of Health promotes the development of specific tools and with the states and municipalities the integration and training. Society collaborates with records for health and conservation.

Innovative aspects

SISS-Geo stands out from most information systems for having citizen participation inherent in its construction, not only in data entry but also for its improvement. The data is open to society and researchers and decision-makers. The SISS-Geo platform integrates, in addition to data collected through smartphones, data from researchers, and thousands of information from socio-environmental and georeferenced health layers. The relationship of this large mass of data is worked through machine learning methods, producing computational models that indicate factors favoring the

理参照的健康层面的数千条信息。通过机器学习方法处理大量数据之间的关系，建立计算模型，确认人畜共患病出现的因素。该系统离线工作，除图像展示外，其功能还包括提供被观察动物的信息、地理参照精度、确定动物身体异常状况的算法、向卫生系统发出警报、记录观测地点的环境影响，并且能在合作方和奥斯瓦多·克鲁斯基金会团队之间提供直接沟通渠道。此外，该系统还能对登记动物的记录和分类验证进行审核。同时通过与社区一起开展地方教育和卫生保健行动，制作新闻通讯和科学传播材料，使受教育程度低的人易于理解该系统。除了圣若泽杜斯皮尼亚斯市外，巴西数百个自治市也开展了这些行动。通过有效的数据输入，该技术也在南极洲进行了测试。

目前世界上尚没有具备相同特征和目标的系统，因此这是一项具有革命性的倡议。该系统通过将公民与公共卫生服务结合起来，不仅拯救生命，还促进了公共政策、福祉和可持续性。由于数据每天都在扩展，因此该倡议又具有渐进性。仅在测试期间，就进行了 190 多项改进和合并。另一方面，该系统采用轻量级设计，可在旧智能手机上运行，为所有巴西人提供数字访问。同时，该系统结构可便于对植物或病媒等其他生物体进行监测。

障碍：说服决策者和研究人员相信，所有人都可以使用应用程序以监控野生动物的健康情况；该平台应由一个多学科小组进行内部开发；若该系统被纳入国家健康和环境服务体系，所有的努力都会值得。如何克服困难：(i) 奥斯瓦多·克鲁斯基金会的无条件支持；与国家科学计算实验室合作，实现高性能开发和处理；多学科团队；“在地方”（in locu）平台的应用与测试；用户通过直接渠道，在社交网络和数十个研讨会及培训中参与项目。

成效

今天，SISS-Geo 是巴西真正的 “一

occurrence of zoonoses. The system works offline and includes, in addition to images, information about the observed animal, georeferencing accuracy, algorithms that identify abnormalities in the animal's physical conditions, generating alerts to the health system, recording environmental impacts at the observation site, in addition to providing a direct communication channel between the collaborators and the Fiocruz team. It also has the audit of records and taxonomic validation of registered animals. Its results indicate local education and health actions with communities, the production of newsletters and scientific dissemination materials that are easy to understand for people with low education. These actions have already involved, in addition to São José dos Pinhais, hundreds of municipalities in Brazil. Its technology was tested in Antarctica, with efficient data entry.

The initiative is revolutionary because there is no system with the same characteristics and purposes in the world. It integrates citizens with the public health service and its results save lives, promote public policies, well-being and sustainability. It is evolutionary, as it was conceived to expand each day. Only during the tests, more than 190 improvements and incorporations were carried out. The system was designed to be lightweight, to work on old smartphones and thereby give digital access to all Brazilians. The architecture allows for easy adaptation to the use of monitoring other organisms as plants or vectors.

Obstacles: convincing decision-makers and researchers that anyone can use an app to monitor wildlife health; that the Platform should be developed in-house by a multidisciplinary team; that all the effort would only be worth it if the system was incorporated by the national health and environmental services. Overcoming: (i) unconditional support from the presidency of Fiocruz; cooperation with the LNCC for the development and processing of high performance; multi and interdisciplinary team; application and testing of the platform "in locu"; users participation through direct lines, on social networks and in the dozens of workshops and trainings.

Desired change or outcome

Today the SISS-Geo is a real "One Health" experience in Brazil. The use by the health service in the localities strengthens professionals, pointing out ways for data quality for forecasting actions. It provides empowerment and autonomy for men and women, adults and young people from different ethnic and cultural backgrounds, through the exchange of knowledge with



站式健康”体验中心。地方卫生保健服务的使用加强了专业人员的能力，为预测行动指出了提高数据质量的方法。通过与专业卫生保健小组交流知识，该平台为来自不同种族和文化背景的人士、成人和年轻人提供赋权和提供自主权。有了 SISS-Geo 的记录、卫生保健小组和社区的参与，以及在圣若泽杜斯皮尼艾斯市的领导和模范作用下，巴西南部地区的人们可在黄热病传播前接种疫苗。

SISS-Geo 收集动物的图像、日期、位置、动物数量（存活、死亡或患病的动物）、物种信息、动物的身体状况、年龄、性别、当地影响（包括公路、农业、保护单位、洪水等）和用户信息（包括职业、年龄、性别、兴趣等）。这些数据都与巴西和国际地理空间数据库有关。收集的死亡动物和生物样本通过国家法定传染病信息系统（SINAN）登记实现关联。该系统包含最终诊断信息，以便确定疫苗接种区域的关键点、高危人群的特征，以及在可

professional health teams. With the SISS-Geo records and the participation of health teams and communities, with the leadership and model being the municipality of São José dos Pinhais, it was possible in the southern region of Brazil to vaccinate people against yellow fever 2 before the virus circulated.

SISS-Geo collects images of the animal, date, location, number of animals, whether alive, dead or sick, species information, physical conditions of the animal, age group, sex, local impacts (highways, agriculture, conservation unit, floods and others) and user information (profession, age, sex, interest...). The data are related to the Brazilian and international geospatial databases. The collection of dead animals and biological samples are correlated through registration in the National Information System for Notifiable Diseases (SINAN), which includes the final diagnosis that allows the identification of critical points for vaccination block, characteristics of the population at risk, need for support local actions by the state or general coordination and animal protection actions, when possible.

Automatic alerts sent in real-time by an algorithm that identifies risk situations for yellow fever became a considerable gain for practical actions that include the displacement of trained teams for the collection of animals in a quick time to guarantee a reliable laboratory diagnosis. It is worth

能的情况下，判断为国家或一般协调和动物保护行动提供支持的必要性。

通过识别黄热病风险情况的算法，实时发送自动警报，为采取实际行动起到了很好的促进作用，其中包括迅速转移训练有素的动物采集小组，以保证可靠的实验室诊断。值得一提的是，黄热病病毒是一种 RNA 病毒，在宿主死亡后会迅速降解。因此，SISS-Geo 警报成了一种战略工具。

经过市政当局在媒体和社交网络上进行广泛宣传，民众开始自愿充当“哨兵”，报告动物传染病病例，因此，圣若泽杜斯皮尼艾斯市人畜共患病监测小组人数得以减少，同时依然能够覆盖全市的广泛地区，进行记录、通知、样本收集、免疫预防，并在病毒可能传播的区域识别关键点和预测障碍。

该市的三分之二是农村地区，有大量从事生态活动和农村旅游、体育和其他户外活动的流动临时人口，以及不同类型的居民社区。坐落在市内的阿方索佩纳国际机场（Afonso Pena International Airport）连接着重要的高速公路，并且靠近州首府。巴西的几个城市都具有以上特点，因此可在该区域和该国其他地方评估和复制这一经验。

若不接种疫苗，全市人口（265,000 人）都可能感染黄热病病毒。因从事农业或采掘活动，劳动年龄男子较妇女和儿童相比，通常有更多机会接触与森林相连的自然地区。虽然具体数字尚未计算，但也必须考虑因公路、机场和战略地理位置而产生的旅游和经济活动的暂时人口。

保持创新的措施

SISS-Geo 易于使用，可为决策者提供快速、安全的解决方案，因此巴西各地市政和州政府使用该工具并正式纳入战略决策，将提高其重要性。寻找互补融资旨在确保创新，扩大用户基数。



mentioning that the yellow fever virus is an RNA virus that degrades quickly when the host dies. This fact makes the SISS-Geo alert a strategic tool.

After extensive dissemination by the municipality's administration in the media and social networks, the population started to act as sentinel, reporting the cases of epizootic diseases, which enabled the reduced team of the São José dos Pinhais Zoonoses Surveillance Unit to cover the extensive area of the municipality to make the records, notifications, sample collection, immunoprophylaxis, and identify critical points and anticipate the block in the possible areas of expected viral circulation.

The municipality has two-thirds of its territory as a rural area, with a huge flow of transitory population for eco-activities and rural tourism, sports and other outdoor activities, as well as different types of resident communities. The municipality still hosts the Afonso Pena International Airport and is cut by important highways and is close to the state capital. These characteristics, shared in several municipalities in Brazil, allowed the evaluation and replication of this experience for the region and others in the country.

The total population of the municipality (265.000 people) can be affected by the yellow fever virus, if not vaccinated. Due to work in agriculture or extractive activities, men of working age usually end up being more exposed than women and children in the natural areas that interface with forests. This number has not been measured, but the transitory populations of tourist and economic activities arising from the road, airport and strategic geographic location must also be considered.

Measures to sustain innovation

The formal incorporation of SISS-Geo as a tool used by municipalities

经验

向市政当局介绍 SISS-Geo 的培训引发了几项简单的行动，如关于黄热病的教育工作、黄热病免疫预防的重要性，以及病毒传入该区域前处于危险地区的非人类灵长类动物面临动物流行病的风险。由于工作人员的减少和其他部门需求上升，该项目无法在广大的领域范围内积极寻找灵长类动物。2019 年，该市开始收到人们关于动物传染病的数次警告，之后使用该系统了解最关键的区域，以便采取更精确的及时行动，最终仅出现 1 例本地病例，且未在市内传播。在巴拉那州兽医协会（Union of Veterinary Doctors of Paraná）的一次讲座中，该市与其他城市分享了这一经验。该经验应传播给尽可能多的城市，以达到预防疾病的最佳效果。

and states throughout Brazil will promote its importance due to its ease of use and quick and safe solutions for decision-makers. The search for complementary financing aims to ensure innovation and expand users

Learning aspects

The training that introduced the SISS-Geo to the Municipality triggered several simple actions, such as educational work on yellow fever, the importance of its immunoprophylaxis, as well as the epizootics of non-human primates in areas at risk before the introduction of the virus in the region. With the reduced staff and other demands of the unit, it would be impossible to actively search for primates in the gigantic territory. In 2019 we started to receive several warnings from the population regarding epizootics and then we were able to use the system that allowed us to understand which were the most critical areas for more incisive punctual actions, resulting in only 1 autochthonous case of the disease, in addition to the non- introduction of the urban cycle in the municipality. The experience was shared with several cities in a lecture promoted by the Union of Veterinary Doctors of Paraná and should be transmitted to as many cities as possible to obtain optimal results, in a timely manner and with a preventive character.

该项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 3：确保健康的生活方式，促进各年龄段人群的福祉
- ◆ 目标 4：确保包容和公平的优质教育，让全民终身享有学习机会
- ◆ 目标 6：为所有人提供水 and 环境卫生并对其进行可持续管理
- ◆ 目标 15：保护、恢复和促进可持续利用陆地生态系统，可持续管理森林，防治荒漠化，制止和扭转土地退化，遏制生物多样性的丧失

(2) 《新城市议程》

为所有公民提供基本生活服务

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 3: Ensure healthy lives and promote well-being for all ages
- ◆ Goal 4: Ensure inclusive and equitable education and promote life-long learning opportunities for all
- ◆ Goal 6: Ensure availability and sustainable management of water and sanitation for all
- ◆ Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

(2) New Urban Agenda

Provide basic services for all citizens

中国 重庆
Chongqing, China

以创新的应急解决方案处理疫情城市医疗废弃物

Innovative Emergency Solutions to the Pandemic Challenge for Urban Medical Wastes Disposal



城市基本信息

人口规模：31,243,200 人
人口增长率 (%)：2.91
面积 (平方公里)：82,400
人口密度 (人 / 平方公里)：379
人均国内生产总值 (美元)：11,479
基尼系数：0.25
支柱产业 (如：工业、贸易、旅游业、创意产业等)：汽车和摩托车、天然气、石油化工、电子信息产业、设备制造、材料工业、能源工业

BASIC CITY DATA

Population size: 31243200
Population Growth Rate (%): 2.91
Surface Area (sq.km): 82400
Population Density (people/sq.km): 379
GDP Per Capita (U.S.\$): 11479
GINI Index: 0.25
Main Source of Prosperity: Automobile and motorcycle, natural gas, petrochemical, electronic information industry, equipment manufacturing, material industry, energy industry

摘要

随着新冠疫情和生态危机在全球暴发，各国都面临着城市医疗废弃物日益增长的挑战。重庆市借鉴“非典”期间累积的经验，探索了城市医疗废弃物处置的创新应急方案，并成功在武汉和重庆应用。为疫情下全球医疗废弃物应急处置及提高城市安全应变能力树立了良好的榜样。

Abstract

With the global outbreak of COVID-19 and the ecological crisis, all countries are facing the challenge of growing urban medical wastes. Based on the experiences during the outbreak of “SARs,” Chongqing municipality has explored innovative emergency solutions to the urban medical wastes disposal, which have successfully been applied in Wuhan and Chongqing. It provides a good model for the global medical waste emergency disposal and improvement of urban safety resilience under the pandemic.

背景

该项目基于一系列法规：

《控制危险废物越境转移及其处置巴塞尔公约》（1992 年）
《关于持久性有机污染物的斯德哥尔摩公约》（2001 年）
《中华人民共和国固体废物污染环境防治法》（2020 年修订）
《医疗废物集中处置设施能力建设实施方案》（中华人民共和国生态环境部，2020 年）
《危险化学品安全管理条例》（2002）
（武汉医疗废弃物处置系统不完善的原因：1）法律法规新但标准陈旧；2）未对医疗废弃物处置系统的预设“余量”进

Background Information

This initiative is based on a series of rules and regulations:

“Basel Convention on the Control of Transboundary Movement and Disposal of Hazardous Wastes” (1992)
“Stockholm Convention on Persistent Organic Pollutants” (2001)
“People's Republic of China Solid Waste Pollution Prevention Law” (2020 revised)
“Medical Waste Disposal Facility Capacity-Building Plan”(MEE, 2020) “Regulations on the Safety Management of Hazardous Chemicals” (2002) (Reasons for Insufficient medical waste disposal system in Wuhan: 1)new laws/regulations but old standards; 2)no requirements for designed "margin" of medical waste disposal, no contingency plan and planning in the

行规定，缺乏应急计划和具体规划；3）只有一家处置医疗废弃物的企业）

起源

在新冠肺炎突发疫情下，及时实现医疗废弃物无害化处理成为了赢得疫情防控阻击战的关键。在医疗废弃物日益增多的情况下，重庆建立了“三级应急机制”，守住了疫情防控的最后一道防线。新冠疫情暴发后，邻近城市武汉的日均医疗废弃物由 45 吨增至 247 吨，远远超出城市的日均处置能力。武汉仅有一家处置医疗废弃物的民营企业，因此面临着巨大的风险。为此，武汉市向中华人民共和国生态环境部（下称“生态环境部”）发出求助。生态环境部和武汉市政府共同邀请中国节能环保集团有限公司（下称“中国节能”）为武汉提供解决方案。随后，中国节能选择了当时唯一一家有能力提供此类服务的重庆智得热工工业有限公司（下称“智得热工”）为武汉市提供医疗废弃物处置应急方案。

在重庆市政府的援助下，武汉建造并运营新冠肺炎医疗废弃物应急处置中心，处置来自雷神山、火神山方舱医院以及其他 16 个地区的医疗废弃物，为武汉居民构筑安全防线。落实重庆市医院环境监管 100% 全覆盖和医疗废弃物 100% 收集处理的原则，确保科学管理医疗废弃物，有效防止二次感染和病毒传播。

武汉 14 天内建成一家日处置量 30 吨 / 天的医疗废弃物应急处置中心，并逐步建成一家日处置量 60 吨 / 天的永久性医疗废弃物处置厂。该厂房高度智能化，可将人体接触感染最小化。重庆建立“三级应急机制”，配备日常报告、调度、分析、研究等系统。对处置设施运行负荷进行预警，运行负荷超过 80% 时启动其他形式的临时性应急处置设施（如移动处置设施、焚烧厂等）。

应急医疗废弃物处置中心的建设体

specifications; 3)only one operator for disposal.

Origins

Under the sudden outbreak of COVID-19, achieving innocuous disposal of medical wastes timely was the key to winning the battle. With the growing medical wastes, a “3-Level Emergency Mechanism” was established in Chongqing to hold the last line of defense of COVID-19. Chongqing’s neighborhood city Wuhan was suffering the outbreak of COVID-19 -- with the daily medical wastes from 45 tons to 247 tons, far exceeding its daily disposal capacity. With only one private operator for medical wastes, Wuhan was under great risk and asked for help from the Ministry of Ecology and Environment of the People’s Republic of China (MEE). MEE and Wuhan Municipal Government asked China Energy Conservation and Environmental Protection Group (CECEP) to offer solutions. In response, the Gient company from Chongqing, the only supplier for such service at that time, was selected by CECEP to offer the emergency solutions to medical wastes of Wuhan.

Under Chongqing's assistance, an emergency disposal center for medical wastes of COVID-19 was constructed and operated in Wuhan, processed medical wastes from LeiShen Shan and HuoShenShan makeshift hospitals and other 16 districts, building security lines for Wuhan residents. The initiative implemented two principles in Chongqing: 100% environmental supervision to the hospitals and 100% collection and disposal of medical wastes. It ensured the scientific regulation of medical wastes, which effectively prevented the secondary infection and virus spread.

In Wuhan, the emergency disposal center for medical wastes with a daily capacity of 30t/d was constructed within only 14 days, followed by a phased 60t/d permanent medical waste disposal plant. The highly intelligent plant minimizes personal contact infection. In Chongqing, a “3-Level Emergency Mechanism” was well equipped with the daily report, dispatch, analysis, and research. There is a warning system to the operation load of disposal facilities: If the operation load exceeds 80%, the system should start other temporal emergency disposal facilities (such as mobile disposal facilities, incineration plants, etc.).

The construction of the emergency medical waste disposal center demonstrated a good partnership between the central government and local government, governments and industries, different cities, and state-owned companies and private companies. In such a partnership, MEE was a



现了中央政府与地方政府、政府与行业、城市与城市、国有企业与私营企业之间的良好合作关系。在这一合作关系中，生态环境部作为牵头合作伙伴，紧急决定并批准两家处置厂的建设施工，中国节能负责两家处置厂的投资、施工和运营，重庆智得热工负责现场技术和设备，武汉环境投资开发集团负责为中国节能提供地方支持，重庆市政府负责为智得热工快速采购建设两家处置厂所需的成套设备提供行政支持。重庆交通主管部门负责确保装载医疗废弃物的车辆顺畅通行，卫生部门和经济信息委员会负责确保医疗防护物资的供应。

由于武汉没有医疗废弃物处置设备生产商，仅有的一家医疗废弃物处置企业也因技术能力不足，难以应对复杂的情况。重庆是国内和国际医疗废弃物处置成套设备制造的领先城市，拥有智得热工和一批配套工厂，形成强大的产业链。这一强大的产业链为该项目提供了重要资源。

施工和运营单位对武汉市应急医疗废弃物处置中心采用预付费模式进行施工运营，不向医院收取任何费用。疫情结束后，武汉市政府对投资进行审核，并按预订一次性向施工和运营单位给付费用。永久性处置厂的建设资金则由施工方承担，施工方后续通过向武汉市各医院提供医疗废弃物收费处置服务，逐步收回投资。

创新

武汉市应急医疗废弃物处置中心和重庆市“三级应急机制”都是针对疫情提出的渐进式创新解决方案，旨在解决疫情带

leading partner who made an urgent decision and approval the construction of two disposal plants. CECEP was responsible for the investment, construction, and operation of two plants. Chongqing Gient was responsible for in-situ technology and equipment. Wuhan Environmental Investment Group provided the local support for CECEP, and Chongqing Municipal Government provided the administrative support for the rapid procurement of complete sets of equipment required by Gient for the two plants. In Chongqing, departments in charge of transportation ensured clear traffic for vehicles loading medical wastes, and the Departments of Healthcare and Economic and Information Commission ensured the provisions of medical protective substances.

As no medical waste disposal equipment manufacturer in Wuhan, the only operator for medical waste disposal hardly responds to complicated situations due to lack of technical capability. Chongqing, both a national and international leading city in manufacturing complete sets of equipment for medical waste disposal, is well equipped with Gient and a group of supporting factories, forming a powerful industry chain. This powerful industry chain formed significant resources for this initiative.

The Advance-fund construction and operation model was adopted for Wuhan emergency medical waste disposal center by construction and operation units with no charges from the hospitals. After the outbreak's end, Wuhan Municipal Government audited the investment, then an agreed lump sum was paid to construction and operation units. The construction party shall bear the construction fund of the permanent disposal plant. The investment will be gradually recovered through the subsequent provision of charged medical waste disposal services to the hospitals in Wuhan.

Innovative aspects

Wuhan emergency medical wastes disposal center and Chongqing's "3-Level Emergency Mechanism" are both evolutionary-based and innovative to the pandemic in management and technology. Such innovations provided not only effective solutions to Wuhan and Chongqing, but also valuable experiences with replicability and transferability for other global cities. This initiative also solve obstacles innovatively.

Top 1 obstacle: powerful resource scheduling and integration

Solution: good collaboration and efficient decision-making mechanism,

Top 2 obstacle: the conflict between the prevention and control capacity

来的管理和技术挑战。这些创新不仅为武汉和重庆提供了有效的解决方案，也为全球其他城市提供了可复制和可借鉴的宝贵经验。同时该项目提出了一系列解决障碍的解决方案。

第一大障碍：需要强大的资源调度和整合能力

解决方案：良好的协作和高效的决策机制。

第二大障碍：医疗废弃物处置控制能力和预防能力不符

解决方案：政府和社会应按远超日常所需的防范型医疗废弃物处置“余量”。

第三大障碍：政策法规支持不足

解决方案：改善法规、标准、设施和技术；做好数据质量控制，加强培训，

提高意识；推行医疗废弃物标准化管理。

成效

快速落成武汉市应急医疗废弃物处置中心，为新冠疫情期间医疗废弃物的及时无害化处置发挥了重要作用，处置了武汉四分之一的医疗废弃物，其中包括两家大型方舱医院的医疗废弃物。日处置量60吨的医疗废弃物处置厂建成后，武汉年安全处置能力高达19,800吨。这不仅提高了武汉的医疗废弃物处置能力，也为全球其他城市提供了借鉴。从新冠疫情暴发至2020年7月11日，重庆累计处置医疗废弃物达11,600吨，实现了“应收尽收”“日产日清”和“安全处置”的目标。

在武汉和重庆，数据收集工作由市政府牵头，参与部门包括市发改委、市建设委员会、市卫生健康委员会、市规划局、市生态环境局、市财政局、市水务局、市城管局等。收集的数据包括地理环境、日产废弃物、危险因素分析、社会稳定风险分析等。

武汉市应急医疗废弃物处置中心在14天内的快速落成（此类工程通常需要10个月）和模块化设备的迅速安装展现

for medical waste disposal

Solution: the government and the society should pay prevention-based medical waste disposal “margin” far exceeding daily needs

Top3 obstacle: insufficient policy and regulation support

Solutions: improving regulation, standards, facilities and technology; ensuring data quality control, enhancing training and

awareness; achieving standardized medical waste management

Desired change or outcome

The rapid completion of the Wuhan emergency medical waste disposal center played a significant role in the timely and innocuous disposal of medical wastes during COVID-19. It processed 1/4 of medical wastes from Wuhan, including two big makeshift hospitals. After completing a 60t/d medical waste disposal plant, the annual disposal capacity can achieve 19800 tons with 100% safe disposal. This has improved Wuhan’s medical waste disposal capacity and provided a model for other cities around the world. From the outbreak of COVID-19 to July 11th, 2020, the accumulated medical waste disposal in Chongqing amounted to 11600 tons, meeting the requirements of “all receivable,” “daily clear,” “safe disposal.”

In Wuhan and Chongqing, data collected by the Municipal Government and its relevant departments followed by Municipal Development and Reform Commission, Municipal Construction Commission, Municipal Health Commission Municipal Planning Bureau, Municipal Ecology and Environment Bureau, Municipal Finance Bureau, Municipal Water Affairs Bureau, Municipal Urban Management Bureau, and other departments, including geographic environment, daily waste production, analysis of hazardous factors, social stability risks analysis and other data. The construction of the Wuhan emergency medical waste disposal center demonstrated a rapid. It replicated the approach followed by as fast as 14 days (usually takes ten months) and rapidly installed modular equipment. New technologies are adopted in the permanent disposal plants to create an environmentally friendly and full smart workshop, preventing the operators from infection. The most important to attain the desired outcome was collaboration and technology. The collaboration was featured by a large number of people involved nationally, a clear division of responsibilities, and a quick response. Hundreds of officials, experts, technicians, workers, medical staff, and volunteers were involved. According to the infectious

了一套可快速复制的方式。永久性处置厂采用全新技术，打造环保全智能车间，防止操作人员感染。要达到预期的结果，关键在于合作和技术。此次项目合作的特点是来自全国各地的参与人员众多，分工明确，反应迅速。数百名官员、专家、技术人员、工人、医务人员和志愿者参与其中。根据新冠病毒的传染特点，重庆的创新机制对医疗废弃物管理提出了以下要求：24小时收集、处置和监测，加强对医院和检疫点垃圾、污水的处理。

疫情期间，城市处于封锁状态，因此该创新设计未能邀请利益相关方参与，但许多志愿者、医务人员、贫困人口和妇女均参与了该创新的实施过程。这些创新重视老年人、妇女和贫困人口获得医疗废弃物处置服务的平等权利。

这些创新解决方案环保且可持续，可应用于全球其他城市，尤其是受疫情或其他重大公共卫生事件影响的发展中国家城市。武汉市应急医疗废弃物处置中心和永久性医疗废弃物处置厂（一期）的日处置量均为 30 吨 / 天，可为武汉 16 个区 388 家医院提供服务，惠及约 1400 万居民。重庆在疫情初期迅速形成了日处置量 90 吨的医疗废弃物处置战“疫”防线，投入 426 名一线管理处置人员和 125 辆医疗废弃物专用车辆，保障了 3200 万重庆居民的健康和环境安全。

保持创新的措施

建立成果跟踪保障机制，不断改进创新，确保疫情后设施和应急机制的持续使用。

开展重庆借鉴武汉经验的研究，如定期培训医疗废弃物处置相关工作人员、跨地区合作共同处置医疗废弃物、合理规划医疗废弃物处置设施等。

经验

(1) 由于该创新方案在武汉成功推行，生态环境部鼓励重庆与其他城市分享



characteristics of the Corona Virus, Chongqing's innovative mechanism made the following requirements for medical waste regulation, followed by 24 hours-based collections, disposal, and monitoring, stricter treatment of rubbish and sewage from hospitals and quarantine locations.

Due to the lockdown of the city during the COVID-19, the design of innovations failed to invite the participation of stakeholders, but in the implementation process of innovations, many volunteers, medical staff, the poor, and women were involved. The innovations have paid much attention to the equal rights of the elders, women, and the poor to get medical waste disposal services.

The innovative solutions are environmentally friendly and sustainable and can be applied in other global cities, especially cities in developing countries under the pandemic or other significant public health incidents. Wuhan emergency medical waste disposal center and the permanent medical waste disposal plant (phase 1)) are 30 tons/d respectively, serving 388 hospitals of 16 districts of Wuhan, benefiting about 14 million residents. In Chongqing, during the earlier of COVID-19, a "Battle Time" daily capacity of 90 tons/d for medical wastes disposal was formed rapidly, involving 426 front-line management and disposal staff and 125 special vehicles for medical waste, safeguarding the health of 32 million Chongqing residents and the environmental safety.

Measures to sustain innovation

-Establish a guarantee mechanism to keep track of the results and continuously improve the innovations to ensure the constant use of the



其在武汉的经验。中国多座城市已准备在此基础上重新规划其医疗废弃物处置设施的处置能力，建设充足的环保医疗废弃物处置设施。同时做好应急处置设施规划，提高当地医疗废弃物处置能力，以防疫情大规模暴发。

(2) 重庆市生态环境局下属的重庆市固体废弃物管理中心荣获中国抗疫杰出贡献奖，并出席了在北京召开的全国表彰大会。表彰大会后，重庆将作为医疗废弃物管理处置领域唯一的获奖城市，与中国和全球其他城市分享其创新经验。

facilities and emergency mechanism in the post-pandemic.

-Undertake studies on what Chongqing can learn from Wuhan experience, such as regular training for staff related to medical wastes, regional collaboration for co-disposal of medical wastes, rational planning of medical waste disposal facilities.

Learning aspects

(1) Because of the successful application of innovative solutions in Wuhan, MEE encouraged Chongqing to share its Wuhan experience with other cities. Several cities in China are ready to re-plan their medical waste disposal facilities based on this model and build enough environmentally friendly medical waste disposal facilities. At the same time, plans for emergency disposal facilities should be prepared to improve the local medical waste disposal capacity in case of a large-scale pandemic outbreak.

(2) The Solid Waste Management Center of CEEB won the national award for its excellent contributions against COVID-19 and attended the national commendation meeting held in Beijing. After this meeting, as the only city winner in the medical waste management and disposal sector, Chongqing is ready to share its innovations with other Chinese cities and other global cities.

项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 3: 让不同年龄段的所有人都过上健康的生活, 促进他们的福祉
- ◆ 目标 6: 为所有人提供水和环境卫生并对其进行可持续管理
- ◆ 目标 9: 建造具备抵御灾害能力的基础设施, 促进具有包容性的可持续工业化, 推动创新

(2) 《新城市议程》

- 为所有公民提供基本生活服务
- 确保所有公民机会均等且不受歧视
- 促进建设更清洁的城市
- 加强城市降低灾害风险和影响的能力
- 加强社会联系和支持创新、绿色倡议

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 3: Ensure healthy lives and promote well-being for all ages
- ◆ Goal 6: Ensure availability and sustainable management of water and sanitation for all
- ◆ Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

(2) New Urban Agenda

- Provide basic services for all citizens
- Ensure that all citizens have access to equal opportunities and face no discrimination
- Promote measures that support cleaner cities
- Strengthen resilience in cities to reduce the risk and the impact of disasters
- Improve connectivity and support innovative and green initiatives

丹麦 首都大区

Capital Region, Denmark

自行车高速公路计划

Cycle Superhighways



城市基本信息

人口规模：1,800,000
人口增长率（%）：10.00
面积（平方公里）：2,568
人口密度（人 / 平方公里）：820
人均国内生产总值（美元）：55,253
基尼系数：0.26

BASIC CITY DATA

Population size: 1800000
Population Growth Rate (%): 10.00
Surface Area (sq.km): 2568
Population Density (people/sq.km): 820
GDP Per Capita (U.S.\$): 55253
GINI Index: 0.26

摘要

丹麦首都大区以及其他 30 座直辖市联合创建自行车高速公路——一个自行车交通基础设施的区域网络，让长途通勤者可通过互联的交通路线实现跨城市边界的自行车通勤。到目前为止，该项目已经建成九条自行车交通路线，成效初显。在自行车高速公路上，骑行者平均增加了 23%，其中新加入的骑行者有 14% 过去一直使用汽车通勤。该项目中的骑行者通常要骑行长距离路程，平均单程为 11 公里左右。

该项目的目标是在该地区建设超过 850 公里的自行车高速公路，目前已建成 174 公里。通过实现该目标以减少交通拥堵，改善人们的健康状况，并使该地区的城市免受二氧化碳和氮氧化物的严重污染。

背景

自行车高速公路协作组（CSC）由自行车高速公路网络办公室（OCS）协调建立，旨在促进市级政府和地区政府之间的协作，共同资助自行车高速公路网络办公室。各直辖市负责规划、建设和资助路线——类似项目通常会由国家共同出资建设。为实现这项共同计划，政府部门制定了概念性战略，以确定自行车高速公路的质量和标准，以及推出了到 2045 年全面

Abstract

Thirty municipalities and The Capital Region of Denmark have joined forces to create the cycle superhighways – a regional network of cycling infrastructure that gives long-distance commuters the opportunity to commute by bicycle across municipal borders on cohesive and correlating routes. So far, nine routes have been implemented and the effects are already showing. On the cycle superhighways, there has been an average 23% increase in the number of cyclists. 14% of new cyclists used to travel by car. And the cyclists ride long distances, with an average trip is 11km (one way).

With 174 km of cycle superhighways today, the aim is to make more than 850 km of cycle superhighways in the region helping to decrease congestion, improve health and save the cities and municipalities in the region from large amounts of CO2 and NOx.

Background Information

The Cycle Superhighway Collaboration (CSC) is coordinated by the Office for Cycle Superhighways (OCS), which facilitates the collaboration between the municipal and regional authorities, which together fund the OCS. Each municipality is responsible for planning, building, and financing the routes – often co-financed by the state. To ensure a common plan, the municipalities have agreed on a conceptual strategy defining the quality and criteria for a cycle superhighway and a vision plan for a fully built network by 2045.

Origins

Car traffic is increasing in Denmark. What equals 22.000 full-time positions every year is being wasted in the Capital Region alone waiting



建成自行车高速公路网络的愿景计划。

起源

丹麦的汽车交通量正在日益增加。仅在首都大区，每年就有相当于 22,000 个全职职位因交通堵塞遭到浪费。自 2012 年以来，二氧化碳排放量增加了 15%，当地四分之一的人口远未达到世界卫生组织 (WHO) 关于身体运动的最低标准建议。骑行通勤所占用的交通空间较少，没有二氧化碳排放，是一种有益健康且高效的出行方式，能很好地将锻炼与日常工作和生活结合起来。

该项目旨在建设一个长达 850 公里、连为一体、高质量的自行车高速公路网络，为骑行者提供与公共交通和汽车通勤同等水平的区域性基础设施服务。这一项目的目的是激励更多通勤范围在 5-30 公里的市民选择自行车作为交通工具，不仅要让哥本哈根成为世界上最适合骑自行车的城市，同时让首都大区成为世界上最适合骑自行车的地区。

作为丹麦最大的跨市自行车基础设

施 in car traffic. CO2 emissions have increased by 15 % since 2012, and a quarter of the region's population fails to live up to the WHO's minimum recommendation for physical activity. Commuting by bike takes up less space in traffic, emits zero CO2, and is a health-beneficial, time-efficient way to combine exercise with this daily work life routine.

Aiming to build a cohesive, high quality network of more than 850 km of cycle superhighways, the ambition is to offer a regional infrastructure service to cyclists equal to what's offered to passengers of public transport and car drivers. The intention is to increase the number of bike commuters who bike 5-30 km daily and to not only be the region with the most bicycle-friendly city in the world (Copenhagen) but to become the most bicycle-friendly region of the world.

Being the largest cross-municipal bike infrastructure collaboration in Denmark, CSC strives to be one of the most innovative forces for bicycle development nationally and internationally. A concept for cycle superhighway standards has been developed and is constantly being updated based on CSCs innovation projects as well as new national and international knowledge. Strictly monitoring and evaluating the routes, the collaboration has ensured a consistent collection of bicycle data that qualifies both the planning process as well as political decision making.

施合作机构，自行车高速公路协作组一直致力于成为国内和国际自行车发展最具创新性的力量之一。基于自行车高速公路协作组的创新项目以及国内外新的知识体系，自行车高速公路标准的概念已经形成并不断更新。严格监控和评估这些路线，确保始终收集相关的自行车数据信息，符合规划过程以及政治决策的要求。

自行车高速公路合作项目由 30 座城市及丹麦首都大区合作推出。2008 年，哥本哈根市政府发起的一项分析调查显示，在首都大区，发展长距离跨市自行车通勤具有巨大的潜力。2009 年，哥本哈根与 15 座城市和首都大区共同创建了自行车高速公路合作项目。

直至今日，该合作项目已涵盖首都大区以及其他 30 座城市，每年还有更多的城市加入。2010 年以来，首都大区和各个城市共同资助自行车高速公路网络办公室。办公室共有 5 名全职员工（年薪约 550,000 欧元）。各市政当局分别提供其各自路段的资金。但现阶段所有路线均得到了国家的资金支持（30%-50%）。这些资金由丹麦道路管理局（Danish Road Directory）统一管理，接受项目申报，再行拨款。该道路网络全面完工总价为 2.95 亿欧元。到目前为止，已有 5000 万欧元投资于现有和计划施工的路线。

创新

作为一个跨城市合作的项目，自行车高速公路堪称革命性的创举。由于丹麦没有区域道路管理机构，从而没有约束性的协议来建立区域自行车基础设施。因此，对 30 个市政当局来说，这种单凭君子协约为基础的合作非常独特。如今，自行车已被视为交通系统的重要组成部分，自行车高速公路成为了新兴的发展趋势，尤其是在欧洲。丹麦首都大区的自行车高速公路是首批高速公路之一，自行车高速公路协作组的目标是继续激励和加强国际合作和知识共享。

The Cycle Superhighway Collaboration is a partnership between 30 municipalities and the Capital Region of Denmark. In 2008, an analysis initiated by the municipality of Copenhagen showed great potential for long-distance bike commutes across municipal borders in the Capital Region. In 2009 Copenhagen joined forces with 15 municipalities and the Capital Region to create the Cycle Superhighway Collaboration.

Today the collaboration consists of 30 municipalities and the Capital Region. More municipalities are joining every year. Since 2010, The Capital Region and the municipalities have co-founded the Office for Cycle Superhighways. The office counts five full-time employees (approx. €550,000/year). All routes are financed by the municipalities financing each their part of the route. All existing routes have, however, received funding (30-50 %) from state funds. The funds are managed by the Danish Road Directory who receives the applications and grants the funds. With a total price of €295 million for a fully implemented network, so far, approximately €50 million has been invested in the existing and upcoming routes.

Innovative aspects

The cycle superhighways can, as a cross-municipal collaboration as well as a concept, be considered revolutionary. Since there is no regional road authority in Denmark, there is no binding agreement to make regional bike infrastructure. Hence this collaboration of 30 municipalities only based on a gentleman's agreement is very unique. Now recognizing cycling as a vital part of the transport system, cycle superhighways have become an emerging phenomenon - especially in Europe. The cycle superhighways in the Capital Region of Denmark were one of the first and the CSC aims to continue inspiring and strengthening the international collaborations and knowledge-sharing.

Ensuring the financial and political support with that many stakeholders is a constant struggle. Valid evaluations and positive effects of the existing routes as well as a cost-benefit analysis showing great benefits from the planned network are one way of ensuring political and financial support within each municipality.

Also, communicating the progress and results in the press and social media and sharing the stories on what impact the Cycle Superhighways have on the commuters' everyday life helps anchoring the project with officials

确保各利益相关方提供相应的财政支持和政策支持是一项长期的挑战。对现有路线进行有效评估、总结积极影响以及成本效益分析，表明了推行规划网络具有巨大效益，能确保各市政当局提供政治支持和财政支持。

此外，通过媒体和社交媒体交流项目进展和成果，分享自行车高速公路对通勤者日常生活的影响，有助于与市政、地方和国家当局的领导以及政界人士建立项目联系。

成效

现有路线的项目成果：骑行人数增加了 23%，其中 14% 的新增人员过去使用汽车出行，平均单程路程为 11 公里，平均时速 19 公里，每天的累计行程 40 万公里。计划中的 45 条路线的影响：达到价值 7.65 亿欧元的社会经济效益；每年减少 4 万天病假、100 万次汽车行程以及 1,500 吨二氧化碳排放。交通方式的划分对新冠疫情的影响尚未得出明确论断。

关于该路线影响的数据由外聘顾问在对每条线路进行评估的前后收集。评估基于对沿途通勤者的采访、自行车数量、速度测试和舒适度测量完成。所有数据均按性别和年龄分列。社会经济效益分析由专聘的经济咨询公司完成，该公司还对其他基础设施项目进行了社会经济效益分析。

路线：不断更新自行车高速公路标准，以适应不同的需要，如地理位置、与公共交通的连通性等。

知识：推出世界上第一个自行车高速公路自行车账户，积极参与大学研究项目。

沟通：发起以商业为导向的方法，旨在在工作场所获得更多有利于自行车出行的交通措施以及政策。

创新：测试和研究新趋势，如高速电动辅助自行车和对基础设施调整的需求。

组织架构：助推国家或国家间多方利益相关者之间的合作，将地方性自行车计

and politicians on a municipal, regional and national level.

Desired change or outcome

Results of existing routes: 23 % increase in cyclists, 14 % of new cyclists used to travel by car, average trip length (one way) is 11 km, the average speed is 19 km/h, and 400,000 km are cycled on a daily basis.

Effects of the planned network of 45 routes:

- €765 million socio-economic surpluses;
- An annual reduction of 40,000 days of sick leave, 1 million car trips, and 1,500-ton CO₂;
- Modal split changes from COVID-19 are not confirmed yet.

The data concerning the effects of the routes is collected in the before- and after evaluation for each route made by external consultants. The evaluations are based on stop-interviews with commuters on the route, bicycle counts, speed test and comfort measurements. The data is disaggregated by gender and age. The socio-economic analysis was made by an economic consultancy firm who also does socio-economic analyses of other infrastructure projects.

Routes:

Continuously updating cycle superhighway standards, accommodating different needs. e.g., geographical area, connectivity to public transport, etc.

Knowledge:

Launched the world's first Cycle Superhighway bicycle account and proactively engaged in research projects with universities.

Communication:

Has initiated a business-oriented approach aiming to get more bicycle-friendly transport initiatives and policies at workplaces.

Innovation:

Testing and studying new tendencies. e.g., speed pedelecs and the need for infrastructure adjustments.

Organization:

Initiating (inter)national multi-stakeholder collaborations to anchor regional bicycle planning on an (inter)national level.

Counting 30 municipalities and a region, CSC is a multi-stakeholder collaboration. Any new concept developed by CSC will be produced in

划定位于国家或国际层面。

自行车高速公路协作组涵盖 30 座城市和一个地区，是一个涉及多方利益相关者的合作组织。自行车高速公路协作组提出的任何新理念都将与利益相关者协作进行。此外，自行车高速公路的使用者还将参与评估、导航测试，成为自行车高速公路的“大使”，等等。目标群体包括通勤者（学生和成年劳动力），不分性别或种族。

该项目旨在提高丹麦首都大区选择自行车作为上班、上学等交通工具的通勤人数。

在自行车高速公路的使用者中，女性占 52%，男性占 48%。主要目标人群一般在 18-67 岁之间。这部分人群在首都大区居民人数中占比约 65%（目标人群 120 万，总人数 180 万）。到 2045 年，该地区居民预计将增长到 200 万人。

保持创新的措施

自行车高速公路网络办公室向国际、国内其他地区不断学习最新经验，并通过网络、会议以及谈话等形式收集关于自行车高速公路、自行车通勤以及自行车基础设施的最新内容。所有相关信息都将通过会议、通讯等方式在合作中共享，并应用到持续的工作中。

经验

目前，自行车高速公路网络办公室已经且会持续与各方开展国际知识共享和发展友好关系，如：

- ▶ 参与欧洲西北部的自行车公路项目；
- ▶ 发起“北欧自行车公路社群”，每月与挪威、瑞典和芬兰的地区自行车计划发起人举行视频会议，探讨不同主题；
- ▶ 制定管理国际都市圈“大哥本哈根区”（包括两个丹麦地区和两个瑞典地区）自行车发展战略行动计划；
- ▶ 每年为规划者、政界人士和记者国际代表团举办 50 多场演讲活动。



collaboration with the stakeholders. Also, the users of Cycle Superhighways are involved in evaluations, testing wayfinding, becoming ‘ambassadors’ for cycle superhighways, etc. The target group is commuters (students and workforce adults), no matter gender or ethnicity.

The project aims to improve the number of commuters in the Capital Region of Denmark who choose bicycles as their means of transportation when commuting to work, education, etc.

Users of the cycle superhighways are 52% female and 48% male. The main target group is generally between 18-67 years old. They count for approximately 65% of the inhabitants of the Capital Region (1.2 million out of 1.8). In 2045, the region is expected to grow to 2 million inhabitants.

Measures to sustain innovation

The Office for Cycle Superhighways works to learn the latest lessons from our (inter)national colleagues and collect the newest knowledge on cycle superhighways, commuter cycling, and cycling infrastructure through networking, conferences, talks, etc. All knowledge is shared within the Collaboration through meetings, newsletters, etc., and implemented in the continuous work.

Learning aspects

Already, CSC has been and are engaged in several international knowledge sharing and developing relations such as

- ▶ partaking in a north-west European Cycle Highway project
- ▶ initiating a ‘Nordic Cycle Highway Community’ with monthly videoconferences discussing different subjects with regional bicycle planners



of Norway, Sweden, and Finland

- project managing the making of a strategic action plan cycling development for the international metropolitan area ‘Greater Copenhagen’ (includes two Danish and two Swedish regions)
- and doing more than 50 presentations a year for international delegations of planners, politicians, and journalists.

项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 3：让不同年龄段的所有人都过上健康的生活，促进他们的福祉
- ◆ 目标 9：建设有韧性的基础设施，促进包容性的可持续工业化，推动创新
- ◆ 目标 13：采取紧急行动应对气候变化及其影响
- ◆ 目标 15：保护、恢复和促进可持续利用陆地生态系统，可持续地管理森林，防治荒漠化，制止和扭转土地退化，阻止生物多样性的丧失

(2) 《新城市议程》

- 促进建设更清洁的城市
- 加强社会联系和支持创新、绿色倡议

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 3: Ensure healthy lives and promote well-being for all ages
- ◆ Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- ◆ Goal 13: Take urgent action to combat climate change and its impacts
- ◆ Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

(2) New Urban Agenda

- Promote measures that support cleaner cities
- Improve connectivity and support innovative and green initiatives

厄瓜多尔 基多
Quito, Ecuador

基多都市区生态效益工具

Eco-Efficiency Tool for the Metropolitan District of Quito



城市基本信息

人口规模：1,847,000
人口增长率（%）：1.50
面积（平方公里）：257,217
人口密度（人 / 平方公里）：70
人均国内生产总值（美元）：6,273
基尼系数：0.45
支柱产业：石油产业

BASIC CITY DATA

Population size: 1847000
Population Growth Rate (%): 1.50
Surface Area (sq.km): 257217
Population Density (people/sq.km): 70
GDP Per Capita (U.S.\$): 6273
GINI Index: 0.45
Main Source of Prosperity: Oil Industry

摘要

《基多城市地区生态效率管理条例》是由基多市议会审议通过的一则法令，允许在快速公交系统（BRT）站台和即将投入运行的地铁站附近的新建筑搭建更高楼层。《土地利用规划》明确规定了建筑的楼层，在此基础上，本条例允许靠近快速公交系统站台的建设项目增建 50% 的楼层，靠近地铁站的建设项目增建 100% 的楼层。为增加楼层，建筑项目必须达到与水资源和能源效率、技术、城市以及环境贡献相关的各项生态效率参数指标。此外，项目须以土地价值计算为准则，向市政当局支付相应费用，方可获准建造更高的建筑。

背景

《基多城市地区生态效率管理条例》是当地政府根据国家土地使用和土地管理、规划法制定的公共政策。

起源

交通是影响基多生态足迹的主要因素之一。随着城市加速拓展，房地产向周边农村和临近城区密集扩张，这一情况持续恶化，迫使居民在通勤上花费更多时间。为此，政府当局专门创建了生态效益工具，极大地优化了城市公共交通，发展基多成为一个更紧凑、多样化和高效的城市。

Abstract

The Eco-Efficiency Ordinance for the Metropolitan District of Quito is a regulation approved by the Metropolitan Council, which allows new buildings to buy more floors if they are located close to the Bus Rapid Transit (BRT) stops and the future Metro stations. The number of floors is already established on the Land Use Plan, and this tool allows applying for a 50% increase of floors in projects located close to BRT stops; and a 100% increase for projects close to a Metro station. To access the increase of floors, the building project has to fulfill parameters of Eco-Efficiency related to water and energy efficiency, technological, urban and environmental contributions. Finally, the project has to pay to the Municipality the right to build higher, applying a formula under the concept of land value capture.

Background Information

The Eco-Efficiency Ordinance for the Metropolitan District of Quito is public policy at the local government. This regulation is framed on the national law of land use and land management planning.

Origins

Transportation is one of the main impacts of the ecological footprint in Quito. This situation is going worse with the accelerated urban sprawl and the intense real estate expansion towards the peripheral rural and peri-urban areas, forcing its inhabitant to move for long periods between their residencies and places of work. For this reason, the Municipality has created this tool that optimized public transport, guiding Quito towards a more compact, diverse, and efficient city.

基多市政府制定这项政策，旨在将基多转变为一个人口更密集、更紧凑和多样化的城市，尤其是让城市地区直接受惠于一体化公共交通系统。这一规定不仅使整个城市变得更加紧凑，还鼓励基础服务完善的城市地区减少向农村以及周边城市地区的扩张。值得一提的是，该管理条例是同类法规中第一个专为新建筑环保设计的政策。

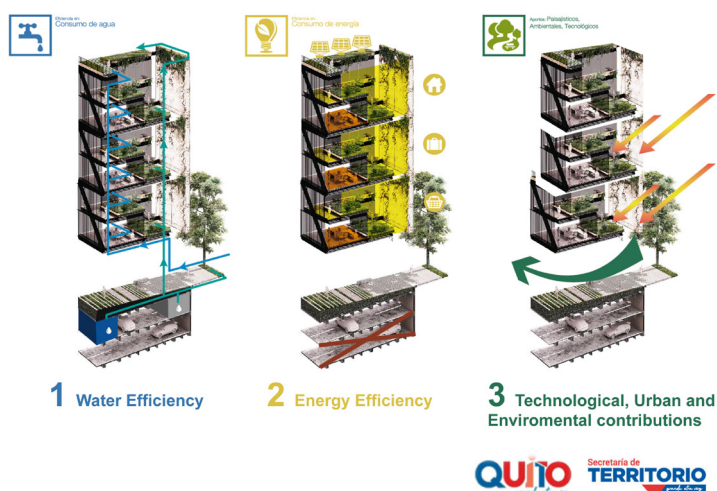
在《土地利用和占用规划》所规定的楼层基础上，这项政策允许公共交通系统附近符合环保设计参数的新建筑增加一定的楼层。这些参数包括诸如水、能源等自然资源的使用效率，以及在防震、安全和生物气候设计等领域的贡献。此外，这一公共政策已经得到私营部门的广泛认可，根据土地占用价值为城市发展创造了重要的收入。

基多当地的建筑部门积极参与了这一生态效率管理条例的制定和实施。但该项目主要由基多市政府发起。

国土、生境和住房秘书处（the Secretary of Territory, Habitat and Housing）是基多当地负责制定城市地区土地使用、生活环境和公共空间及住房问题公共政策的政府机构。从这层面上来说，促进实施这一生态效率管理条例的主要资源包括人力、技术以及管理资源。国土、生境和住房秘书处拥有一个多学科技术团队，长期以来致力于研究这些项目。目前，生态效率项目的审核工作由经市政当局特批的私营企业负责，这些企业根据国土、生境和住房秘书处颁布的地方法规和指南方针开展工作。

创新

从国家和地方来看，该项目具有革命性意义。新建更高楼层的建筑是城市发展的手段之一，已在多个城市开始实施。在基多，为了减少新建筑对环境的影响，管理条例还纳入了其他强制性参数。该规定充分考虑到房地产开发商对建造更高楼层



The Municipality has developed this policy that aims to transform Quito into a denser, more compact and diverse city, especially in the urban areas directly influenced by the integrated public transport system. In addition to promoting a compact city, this regulation encourages development in areas that have all basic services reducing the urban sprawl toward the rural and peri-urban areas. It is important to mention that this instrument is the first approach related to environmentally responsible design in new buildings.

This policy allows the increase of floors above what is established in the Land Use and Occupation plan for new buildings that are implemented in areas close to the public transport system and comply with environmentally responsible design parameters. These parameters seek efficiency in the use of resources such as water, energy, as well as contributions in the fields of seismic, safety, and bioclimatic design. Additionally, this public policy has been very well accepted by the private sector, generating important incomes for urban development under the concept of land value capture.

The construction sector in the city of Quito has been very active and participatory in the development and application of the Eco-Efficiency regulation; however, the initiative is from the Municipality.

The Secretary of Territory, Habitat and Housing is the local entity in charge of generating public policy around land use, habitat, public spaces, and housing for the Metropolitan District of Quito. In this sense, the main resources that have made it possible to implement the Eco-Efficiency regulations are human, technical, and managerial resources. The Secretary has a multidisciplinary technical team that has been working on these projects for a long time. Currently, the review of Eco-Efficiency projects is

建筑的需求，因此，市政当局允许他们使用环保设计、支付额外楼层的费用来获得建造高楼的机会。在这种情况下，开发商可以通过承包基础设施、公共服务或设施机构以及其他与公共空间相关的公共工程直接抵偿费用。

在这项政策的制定过程中，明显的一个主要障碍是难以获得相关信息，只有收集到充分的信息才能为能源效率、用水消耗以及其他技术和绿化贡献的各个参数建立衡量标准。幸运的是，标准设定得到了学术界以及其他上市公司的大力支持，他们根据自己的知识，建立起第一套生态效率标准，这将是未来衡量公共政策影响的重要指标。

成效

到目前为止，已有 35 栋建筑根据这一标准获得批准。在施工以及投入使用的过程中，这些建筑通过降低了对水资源、能源以及其他资源的消耗，为生态环境做出巨大贡献。该项目在基多城市地区的主要成果之一是，大大提升了公共交通系统周边地区的人口密度，巩固发展城市，从而延缓了城市扩张。根据土地占用价值的理念，从经济效益的角度来看，这些建筑为市政当局创造了 10,669,816 美元的收益。

该生态效率工具共涉及 20 个参数，分为 3 大类别：（1）用水效率；（2）能源效率；以及（3）技术、城市和环境贡献，每一项都按照总分为 100 分的评分制度进行等级排序。每一个类别都建立了相应的基准指标，让政府部门记录有关收集和使用的雨水量、透水土壤面积、用途多样性、本地材料的使用、废物管理、自行车停放规范以及施工期间废物的减少量等信息。

为了激励建筑行业，特别是促进新建大楼采用环境可持续技术与设计，该政策实行了一系列新的奖励措施。这就意味着必须为该生态效率模型的每个参数建立信

in charge of private companies that have been accredited by the Municipality for this proposal, based on the local regulations and guidelines issued by the Secretary of Territory, Habitat and Housing.

Innovative aspects

The initiative is considered revolutionary in the local and national context. The purchase of extra floors is an urban development instrument that has been implemented by several cities. In the case of Quito, other mandatory parameters are included in the benefit of reducing the environmental impacts of the new buildings sector. The regulation understood very well the necessities of the real estate sector, which is interested in growing in height; so the Municipality allows them in exchange of environmentally responsible design as well as the payment for the purchase of extra floors, which in this case can be paid directly by the developer with the execution of a public work such as infrastructure, public services or facilities and other works related to public space.

Within the development of this policy, one of the main obstacles identified was the availability of information that allows establishing a baseline of each parameter that measures the energy efficiency, water consumption, and other technological and landscaping contributions. Fortunately, the construction of the baseline was supported by academia and other public companies; they contributed to their knowledge and allowed to establish a first Eco-Efficiency baseline, which will be the indicator that measures the impact of the public policy in the future.

Desired change or outcome

To date, 35 buildings have been approved under this normative. These buildings have contributed to the environment through the reduction of water and energy consumption and other resources during the construction process and in its useful time. One of the main outcomes for the Metropolitan District of Quito is the support of densification and consolidation of the city around the public transport system, reducing urban sprawl. In economic matters, these buildings have generated \$10' 669. 816,00 dollars for the Municipality under the concept of land value capture.

The Eco-Efficiency tool has 20 parameters divided by three categories: (1) Water Efficiency, (2) Energy Efficiency and (3) Technological, Urban and Environmental Contributions, each of them has been prioritized with a

息评定方法的标准。这是基多首个建立的指标标准，其实施方法根据地方技术的情况与可用性而拟定。

为该政策与相关技术信息提供支持的利益相关者包括房地产行业、研究院和协会，如厄瓜多尔建筑师协会。整个项目吸引了许多专业人士，如城市规划师、建筑师、环境工程师以及经济学家等。

该项目为包括社会住房在内的项目发展提供了激励。允许社会住房比例至少在 10% 以上的建筑完全免除额外楼层的费用。这一激励手段得以为人们提供更多地理位置优越的经济适用房。截至目前，已经有 1 栋大楼应用了该模式。

从空间方面来看，评估项目价值的方法包括将地面平层与公共空间结合起来的建筑设计策略，有助于为建筑周围的公共空间带来更多效益。

当然，本项目重点关注并适用于城市公共交通系统辐射范围内的地区，包括快速公交线路（2 条）以及地铁（1 条）。附件包括一张地图（附件 1、2），图上标注了可实行这一项目的所有区域。

根据这一理念，目前已有 35 个项目顺利建成，新的项目也在计划实施中。这些建筑大多属于混合用地（商用、办公或住宅），所有项目累计增加了约 150 层楼，为在此居住和上班的城市居民带来极大的便利。这些建筑靠近公共交通系统，大大提升了人们的流动性以及获得其他基本服务的便利性。

保持创新的措施

目前，该土地利用规划还在不断更新，纳入了强制性的生态效率参数以及农村地区的其他参数，以确保新建筑减少碳足迹。

经验

该政策非常实用，区别于其他的全球绿色认证计划，能有效迎合地方城市的特质。这是一项效益高的战略计划，除了认

score that reaches in total of 100 points. Each category establishes a baseline indicator that lets the Municipality collect information related to the amount of rainwater collected and used, permeable soil area, diversity of uses, use of local material, waste management, implementation of bicycle parking, reduction of waste during construction, etc.

This policy has allowed the application of new incentives in the construction sector, mainly in new buildings, for the use of environmentally sustainable technology and designs. This has forced the creation of a baseline of information qualification methods for each parameter of the Eco-Efficiency model, having for the first time a baseline of indicators of this type in Quito. The methodology has been developed based on the situation and availability of local technology.

Some of the main stakeholders that supported the policy and the technical information behind it are the real state sector, the academy and guilds like the collage of architects of Ecuador. This involved multiple professionals such as urban plans, architects, environmental engineers, economists and others.

The initiative has generated incentives for the projects that include social housing as part of the program. The buildings that include at least 10% of the total units as social housing are completely exonerated from paying the value of the extra floors. This incentive allows offering affordable homes in strategically located areas. To date, one building has applied this model.

In the spatial aspect, the method to value the projects include urban design strategies that integrate the ground floor with the public space; this generates benefits in the surroundings of the public space of the building.

Yes, the initiative focuses and applies to the areas that are influenced by the public transport system of the city, including the Bus Rapid Transit Lines (2 BRT) and Metro (1 line). There is a map (Annex 1 and 2) with the areas that can apply this instrument.

There are 35 projects built under this concept, and new ones are coming. These buildings tend to include a mix used (Commercial, office, and residential) with approximately 150 additional floors in total between all projects, benefitting people who live and work in these buildings close to the public transport system facilitating their mobility and access to other basic services.

Measures to sustain innovation



证所带来的其他效益，对房地产开发商来说，他们可以建造更高的建筑楼层；对市政当局来说，从开发商处获得相应的土地占用价值同样非常重要，因为所取得的收益可转而投资其他多年来没有得到融资的公共工程。

该生态效率政策已与国际城市共享，这些城市正在探索不同的激励措施，以期将这一项目应用到当地。即便考虑到地区特点与各个市场的激励机制存在不同，这也不失为一种可复制的办法。此外，这也是一项创新型政策，“迫使”开发商在新建筑中采用环保设计。

Currently, the land use plan of the city is being updated, which is incorporating obligatory parameters of eco-efficiency as well as other parameters in rural areas, guaranteeing that the new buildings reduce their carbon footprint.

Learning aspects

The policy is very practical because, unlike other global green certifications, this one is very well suited to the particularities of the city. It is a strategy that, in addition to certification, generates other important benefits; for the real estate developers, the extra floors, and for the Municipality, the payment of land value capture is very important because these buildings allow the city to invest in other public works that have not been financed for years.

The Eco-Efficiency policy has been shared in some international spaces with other cities that seek to generate other incentives and adapt this tool to their localities. Considering the particularities of the territories and the incentives of each market it is a replicable tool. It is an innovative policy that has “forced” developers to apply strategies of environmental design in new buildings.

项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 3: 让不同年龄段的所有人都过上健康的生活, 促进他们的福祉
- ◆ 目标 6: 为所有人提供水 and 环境卫生并对其进行可持续管理
- ◆ 目标 12: 采用可持续的消费和生产模式
- ◆ 目标 13: 采取紧急行动应对气候变化及其影响

(2) 《新城市议程》

- 促进建设更清洁的城市
- 加强城市降低灾害风险和影响的能力
- 为应对气候变化, 采取行动减少温室气体排放
- 加强社会联系和支持创新、绿色倡议

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 3: Ensure healthy lives and promote well-being for all ages
- ◆ Goal 6: Ensure availability and sustainable management of water and sanitation for all
- ◆ Goal 12: Ensure sustainable consumption and production patterns
- ◆ Goal 13: Take urgent action to combat climate change and its impacts

(2) New Urban Agenda

- Promote measures that support cleaner cities
- Strengthen resilience in cities to reduce the risk and the impact of disasters
- Take action to address climate change by reducing their greenhouse gas emissions
- Improve connectivity and support innovative and green initiatives

印度 奥里萨邦
Odisha, India

城市工资就业倡议 ——降低城市的脆弱性和增强城市韧性

The Urban Wage Employment Initiative – Reducing
Vulnerabilities and Enhancing Resilience of the Urban



城市基本信息

人口规模：7,003,656
人口增长率 (%)：26.94
面积 (平方公里)：3,256
人口密度 (人 / 平方公里)：2,146
人均国内生产总值 (美元)：1,600
基尼系数：0.31
支柱产业：工业、服务业

BASIC CITY DATA

Population size: 7003656
Population Growth Rate (%): 26.94
Surface Area (sq.km): 3256
Population Density (people/sq.km): 2146
GDP Per Capita (U.S.\$): 1600
GINI Index: 0.31
Main Source of Prosperity (e.g. industry, trade, tourism, creative industry, etc.): Industry & Services (73%)

摘要

在印度，新冠疫情迅速从一场公共卫生挑战转变为针对城市贫民和非正式劳工的重大经济危机。据世界银行的数据显示，2020年3月24日开始的全国封锁影响了4,000万境内流动人口。奥里萨邦政府住房和城市发展厅（Housing & Urban Development Department of Government of Odisha, H&UDD）在几周内对此作出回应，宣布了“城市工资就业倡议”（Urban Wage Employment Initiative, UWEI）。该倡议通过启动广泛的公共工程项目，解决城市非正式劳工迫切的生计需求。倡议为城市贫民定制的住房和城市发展厅计划使用了新的资源和创新技术，如“JAGA任务”（JAGA Mission）创建了2000个贫民窟的高分辨率地理数据库，旨在改善整个邦的贫民窟。奥里萨邦位于热带气旋高发区，因此该项目的另一个目的是防备季风，从而提高生态复原力。

背景

该项目基于现行健全的福利计划和针对城市贫困人口的立法规定，由住房和城市发展厅通过政府命令颁布。例如，“城市工资就业倡议”项目根据2017年《奥里萨邦贫民窟居民土地权法案》（The

Abstract

In India, the Covid-19 pandemic quickly turned from just a public health challenge to a major economic crisis for the urban poor and informal labour. According to the World Bank, 40 million internal migrants were impacted by the nationwide lockdown, which commenced on March 24, 2020. Within weeks the Housing & Urban Development Department of Government of Odisha (H&UDD) responded by announcing the Urban Wage Employment Initiative (UWEI). It addressed the immediate livelihood needs of informal urban workers by initiating widespread public works projects. UWEI drew on resources and innovative technology already created under ongoing H&UDD schemes for the urban poor e.g. high-resolution geo-databases of 2000 slums created under JAGA Mission, a scheme aimed at upgrading slums across the state, were used for targeting UWEI activities. Lying in a cyclone prone zone, the employment activities were aimed at monsoon preparedness as well, thus enhancing ecological resilience too.

Background Information

The initiative was declared through Government Orders passed by the H&UDD, based on the provisions of already existing and robust welfare schemes and legislations aimed at the urban poor. For example, the UWEI converges funds and resources from UNNATI Mission which was aimed at providing infrastructure for the urban poor and JAGA Mission which was aimed at comprehensive upgrading of all slums in the state. This initiative itself was based on the legislation of The Odisha Land Rights to Slum Dwellers Act, 2017.

Odisha Land Rights to Slum Dwellers Act) 拟定, 汇聚旨在为城市贫民提供基础设施的“UNNATI 任务”(UNNATI Mission) 和旨在全面改善该邦所有贫民窟的“JAGA 任务”(JAGA Mission) 的资金和资源。

在第一阶段, 现行项目必须汇聚相关资金和资源, 因为“城市工资就业倡议”须在数日内进行规划和启动, 以便有效保障民生。现在进入第二阶段, “城市工资就业倡议”已转变为成熟的国家级旗舰项目, 并获得专项预算分配。

起源

由新冠疫情引发的全国封锁导致城市贫民突然陷入严重的失业危机, 为应对这种局面, 创建了“城市工资就业倡议”。成千上万的城市贫民在数天内失业, 大量失业工人返回家乡。

城市工资就业倡议旨在保障城市贫困人口的生计, 尤其是在新冠疫情期间经济严重脆弱的外来劳工、妇女、变性者和残疾人等弱势群体的生计, 在城市地区建设地方和社区的复原能力。该项目主要目的是实现可持续的生计, 但同时致力于:

1. 通过让地方和社区直接参与公共工程, 进一步促进长期发展的协同作用, 以推进当地社区组织的领导和能力建设, 从而加强第四级管治;
2. 通过创造包容和参与性的社区资产, 提高生态恢复力;
3. 应用创新技术提升公共福利计划和措施的整体可持续性;
4. 通过城市工资就业倡议项目, 升级贫民窟的基础设施和服务至城市基础设施的水平, 消除贫民窟, 建设无贫民窟城市。

该项目建立在现有的福利计划基础上, 并与之相结合, 以便快速、有组织地应对危机。

城市工资就业倡议采用了以下创新方法, 以实现预期目标:

1. 加强女性自助团体和贫民窟居民协



Such convergence with existing schemes was essential in the 1st phase as the UWEI had to be planned and initiated within days in order to be effective in protecting livelihoods. Now, in the 2nd phase, UWEI has been converted into a full-fledged state flagship scheme with dedicated budgetary allocations.

Origins

UWEI was created in response to the sudden and overwhelming unemployment crisis of the urban poor, due to nationwide lockdowns initiated to contain the Covid-19 pandemic. Hundreds of thousands of urban poor were rendered jobless within days and other scores of unemployed workers were returning to their hometowns through distress migration.

The UWEI aims to secure the livelihoods of the urban poor, especially the vulnerable groups like migrant labourers, women, transgenders, and persons with disabilities who were facing severe economic vulnerabilities during the Covid-19 pandemic and building local and community resilience in urban areas. While it's primary aim is to enable sustainable livelihoods, it also aims to:

1. strengthen the fourth tier of governance by building local leadership and capacities of community organisations by directly involving them in the public works to further synergies for long term development;
2. enhance ecological resilience by creating inclusive and participative community assets;
3. apply innovative technology to enhance the overall sustainability of public welfare schemes and measures;
4. building slum free cities, by using the UWEI program to upgrade

会等社区组织；

2. 消除中间人和承包商，让社区组织直接参与项目的规划和执行，从而促进基层的协作性和包容性领导；

3. 通过支付执行费用的 7.5% 作为监督费，以激励社区组织；

4. 结合其他正在进行的发展和福利计划；

5. 融合劳动密集型和高科技；

此外，在贫民窟建造社区中心时，建筑地点的位置是根据“JAGA 任务”项目制作的高分辨率无人机图像确定。

城市工资就业倡议不仅与城市贫民合作，让贫民窟居民协会和女性自助团体参与规划和执行项目，还与私营服务提供商合作，采用创新的数字技术（无人机图像），并结合政府住房和城市发展厅和其他政府部门的其他福利计划。这些创新通过建设地方领导和社区组织的能力，加强了第四级管治，以进一步促进长期发展的协同作用。

城市工资就业倡议将其资源和资金与政府住房和城市发展厅现行的大型福利计划的资源和资金进行融合，在更高级别上创建独特的快速响应模式。结合高分辨率地理数据库等智能技术资源与基层社区组织，以充分利用现有资源，优化支出。

创新

城市工资就业倡议既具有先进性，又兼具革命性。原因如下：

先进性——倡议建立在现有的福利计划资源基础上，并与之整合，以对新冠疫情造成的生计危机作出迅速的反应。

革命性——在应对如新冠疫情等特殊危机时，倡议利用了现有资源寻找途径、解决方案和方法，以创建一种目前正被印度国家政府和其他邦 / 地区政府大力效仿的突破性模式。

该倡议面临的一些挑战和阻碍包括：

1. 由于缺乏加入该项目的劳工信息，

slum infrastructure and services and thereby reducing slums, by bringing infrastructure in slums to the level of citywide infrastructure.

The model builds on and converges with already on-going welfare schemes to respond to a crisis quickly and yet in an organised manner.

UWEI uses the following innovative methods to meet its intended objectives:

1. strengthening community organisations like women self-help groups and slum dwellers association;

2. eliminating middlemen or contractors and directly involving the community organisations in planning and execution of the projects thus promoting collaborative and inclusive leadership at the grass-root level;

3. incentivizing the community organisations by paying supervision charges at 7.5% of the work executed;

4. convergence and integration with other ongoing development and welfare schemes;

5. combination of labour intensive and high-technology measures.

Furthermore, while constructing community centres in slums, the locations for construction sites were decided using high-resolution drone imagery produced under JAGA Mission.

UWEI partners not just with the urban poor, by involving associations of slum dwellers and women's self-help groups planning and execution of the projects, but also with private service providers for the use of innovative digital technology (drone imagery) and other welfare schemes of H&UDD and other Government Departments.

These innovations have strengthened the fourth tier of governance by building local leadership and capacities of community organisations to further synergies for long term development.

The UWEI converges and integrates resources and funds of its own with those of large on-going welfare schemes of H&UDD to create its unique model of quick response at a large level. Smart technology resources, such as high-resolution geo-databases are combined with grass-root level community organisation to leverage these existing resources and optimize expenditure.

Innovative Aspects

UWEI is both evolutionary and revolutionary due to reasons given below:

Evolutionary - because it integrated with and built upon the resources

地方机构、自助团体和贫民窟居民协会难以雇佣工作能力相符的人力资源。

2. 受益人每周通过 DBT 领取报酬，但大多数人没有银行账户。

3. 贫民窟自主团体和贫民窟居民协会等执行伙伴的技术与财政能力较弱。

成效

该倡议已在以下几方面取得成功：

1. 为 40 多万城市贫困人口，尤其是外来人口、妇女、变性人和残疾人等弱势群体创造含 140 万个工作日的可持续生计和体面就业机会，从而提升这些人群的能力；

2. 创造价值 1,600 万美元的社区资产，恢复能力强，参与度高，其中包括在城市地方机构管理区增加绿化覆盖面并为社区和自助团体建立活动空间 / 开放空间）；

3. 通过建立 5,700 多个女性自助团体以及 600 多家贫民窟居民协会（社区组织）的地方领导和能力，加强第四级管治，以进一步实现长期发展的协同作用。

城市地方机构下的邦级和区域级城市工资就业倡议单位通过在线信息管理系统进行数据测量，定期收集和分析用于评估变更的关键数据 / 指标，其中包括完成的工作、进行中的工程、已付的工资、已付的监督费用、拖延支付工资的次数、已创建的社区资产数量、产生的工时数、求职者的数量、参与的执行伙伴等。此外，所收集的数据 / 指标按性别、残疾人、变性人和无技能 / 技能熟练 / 高技能等组别分类。

为实现倡议项目的预期目标，政府采用了以下创新模式：

1. 加强女性自助团体和贫民窟居民协会等社区组织；

2. 消除中间人和承包商，让社区组织直接参与项目的规划和执行，从而促进基层的协作性和包容性领导；

of on-going welfare schemes, in order to provide a very rapid response to the livelihood crisis caused by the Covid-19 pandemic.

Revolutionary - because in responding to a unique crisis such as the Covid-19 pandemic, it used existing resources to create approaches, solutions and methods to create a model, which was so radical that it is now being emulated by the national government and other state/regional governments in India.

Some of challenges/obstacles to the initiative were:

a) Absence of information about the labour force who would be enrolled into this programme made it challenging for local agencies, self-help groups (SHGs) and slum dwellers-associations (SDAs) to hire right resources and match jobs with the skills.

b) Beneficiaries were to be paid by DBT weekly but most of them lacked bank accounts.

c) Weak technical & financial capacities of the implementing partners, i.e., SHGs and SDAs.

Desired Change or Outcome

The initiative has already been successful in

1. creating sustainable livelihoods and decent employment of 1.4 million man-days for more than 0.4 million urban poor especially the vulnerable groups like migrants, women, transgenders, and persons with disabilities thereby enhancing human capabilities

2. creating participatory resilient community assets worth USD 16 million including increasing the green cover, and built-up spaces or open spaces for community and self-help group activities in ULB wards

3. strengthening the fourth tier of governance by building local leadership and capacities of more than 5700 women self-help groups and 600 slum dwellers association (community organisations) to further synergies for long term development.

UWEI cell at the state level and at the field level in ULBs measures the data leveraging online MIS systems. Key data/indicators collected and analyzed on regular basis to assess the change are the number of completed works, number of ongoing works, value of wages paid, value of supervision charges paid, delays in wage payments, number of community assets created, number of mandays generated, number of wage seekers engaged, number of implementing partners involved, etc. Furthermore, the data/indicators

3. 通过支付执行费用的 7.5% 作为监督费，以激励社区组织；

4. 结合其他正在进行的发展项目和福利计划；

5. 融合劳动密集型措施和高科技手段。

城市贫民、贫民窟居民和非正式劳工不仅是城市工资就业倡议的主要受益者，也是该倡议项目规划和执行的主要合作方。在其他福利计划下建立的女性自助团体和贫民窟居民协会也是社区组织的重要组成部分，负责规划倡议内容和执行工作。私营部门组织和智库与政府住房和城市发展厅共同利用高技术资源，与社区组织一起指导、定位和监测城市工资就业倡议的干预活动。

城市工资就业倡议不仅提供快速救济，以降低奥里萨邦城市贫民的生计脆弱性，同时向因新冠疫情而滞留在该邦以及被迫从周边地区返回该邦的流动工人提供援助。

此外，新冠疫情加剧了现有女性不平等现象。城市工资就业倡议通过以下方式解决疫情对性别平等的影响：a) 让女性自助团体成为该倡议规划、决策和实施的核心；b) 在所有数据和协调机制中纳入性别观点；c) 为女性工人提供安全可靠的工作环境。

在实施的第一阶段，城市工资就业倡议创造了 140 多万个工作日的工作机会，使近 40 万城市贫困人口和外来工人直接受益，其中近 40% 的受益者为女性。在实施的下一阶段，预计每年将产生 350 多万个工作日的工作量，直接惠及数百万城市贫民、贫民窟居民以及非正式工人。

保持创新的措施

可持续性城市工资就业倡议实现其预期目标的重要因素，该倡议着眼于：

1. 基层协作性和包容性领导；

2. 与其他现行的发展和福利计划融合，以此模式促进和持续创新。

collected are disaggregated by gender, people with disabilities, transgenders and unskilled/skilled/high skilled etc.

Some of the innovative models adopted to achieve the intended objectives of the initiative were:

1. strengthening community organisations like women self-help groups and slum dwellers association,

2. eliminating middlemen and contractors and directly involving the community organisations in planning and execution of the projects thus promoting collaborative and inclusive leadership at the grass-root level,

3. incentivizing the community organisations by paying supervision charges at @ 7.5% of the work executed,

4. convergence and integration with other ongoing development and welfare schemes and

5. combination of labour intensive and high-technology measures.

The urban poor, slum dwellers and informal workers are not only the main beneficiaries of the UWEI but are also its main partners in planning and implementation. Women's self-help groups and slum dwellers associations created under other welfare schemes are part and parcel of the ward level committees responsible for planning the initiative and are also the implementing partners. Private sector organisations and think tanks operate together with H&UDD in the use of marshalling high-technology resources for guiding, targeting and monitoring UWEI interventions along with community organisations.

UWEI not only provides rapid relief to reduce livelihood vulnerabilities of the urban poor in Odisha, but also to migrant workers stuck in the state due to the pandemic and also the migrant workers returning to the state due to distress in-migration from surrounding regions.

Furthermore, the Covid-19 pandemic has exacerbated existing inequalities for women. UWEI has addressed the gender impacts of the pandemic by a) putting women self-help groups at the centre of the planning, decision making and implementation of the initiative, b) including gender perspectives in all data and coordination mechanisms and c) providing safe and secure working environments for women workers.

In the first phase of its implementation, UWEI has generated more than 1.4 million man-days and directly benefitted close to 0.4 million urban poor and migrant labourers, of which close to 40% are women beneficiaries. In

此外，该倡议已转变为享有持续预算分配的全面计划。

经验

其他国家 / 邦 / 城市可以借鉴成功实施该倡议所采用的创新模式和方法，尤其是该倡议创造参与性社区资产的方式，通过建立社区组织的地方领导力和能力，加强第四级管治，进一步促进长期发展的协同作用，并为城市贫民，尤其是妇女、变性者和残疾人等弱势群体提供可持续的生计和体面就业机会，从而提高这些人群的能力。

奥里萨邦充分记录了其经验和最佳实践，制定了知识传播、教育和宣传策略。住房和城市事务部与印度政府已和其他邦分享了奥里萨邦的城市工资就业倡议经验，以便制定类似的措施，解决各自城镇贫民的生计危机。

the next phase of its implementation, it is expected to generate more than 3.5 million mandays per annum directly benefitting millions of urban poor, slum dwellers and informal workers.

Measures to Sustain Innovation

Sustainability is critical for the initiative to achieve its intended objectives. UWEI looks at:

- a) collaborative and inclusive leadership at the grass-root level and
- b) convergence and integration with other ongoing development and welfare schemes as a model to promote and sustain the innovation over time.

Furthermore, the initiative has been converted in a full-fledged scheme with sustained budgetary allocation.

Learning Aspects

The other countries/states/cities can learn from the innovative model and approaches used for the successful implementation of the Initiative, in particular the way the initiative has created participatory community assets, strengthened the fourth tier of governance by building local leadership and capacities of community organisations to further synergies for long term development and enabled sustainable livelihoods and decent employment for urban poor especially the vulnerable groups like women, transgender and persons with disabilities thereby enhancing human capabilities.

Odisha has well documented the learning and best practices and has knowledge dissemination, education and advocacy strategy in place. The experience of Odisha with UWEI has already been shared by the Ministry of Housing and Urban Affairs, Government of India with other states, so that they can develop similar measures to address the crisis of livelihood of the urban poor in their own cities and towns.



项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 1：在全世界消除一切形式的贫困
- ◆ 目标 3：确保健康的生活方式，促进各年龄段人群的福祉
- ◆ 目标 8：促进持久、包容和可持续经济增长、促进充分的生产性就业和人人获得体面工作
- ◆ 目标 10：减少国家内部和国家之间的不平等

(2) 《新城市议程》

确保所有公民机会均等且不受歧视
加强城市降低灾害风险和影响的能力
完全尊重难民、移民、境内流离失所者的权利，无论其处于何种移徙状态

Relevance of the Initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 1: End poverty in all of its forms
- ◆ Goal 3: Ensure healthy lives and promote well-being for all ages
- ◆ Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- ◆ Goal 10: Reduce inequality within and among countries

(2) New Urban Agenda

Ensure that all citizens have access to equal opportunities and face no discrimination

Strengthen resilience in cities to reduce the risk and the impact of disasters

Fully respect the rights of refugees, migrants and internally displaced persons regardless of their migration status

印度 伯翰普

Berhampur, India

通过污物处理项目促进可持续环境保护 和女性赋能

**Promoting Sustainable Environment Conservation and
Women Empowerment through Faecal Sludge and Septage
Management (FSSM)**



城市基本信息

BASIC CITY DATA

人口规模：391,405
人口增长率 (%)：10.00
面积 (平方公里)：37.09
人口密度 (人 / 平方公里)：10,552
人均国内生产总值 (美元)：1,600
基尼系数：0.31
支柱产业：工业和服务业 (73%)

Population size: 391405
Population Growth Rate (%): 10.00
Surface Area (sq.km): 37.09
Population Density (people/sq.km): 10552
GDP Per Capita (U.S.\$): 1600
GINI Index: 0.31
Main Source of Prosperity: Industry & Services (73%)

摘要

伯翰普是奥里萨邦最古老、人口最稠密的城市之一。该市没有地下排水系统，因此需要采用非常规的污物处理方法来管理城市产生的污水。伯翰普市政公司 (BeMC) 采用了一种以社区为主导的创新综合处理方法，使妇女团体参与到污物处理价值链的各个环节。妇女自助团体 (Self-Help Group, SHG) 致力于建造卫生厕所，以便安全管控粪便污物，推动化粪池机械化排空，运营和管理粪便处理厂，并循环使用经处理的粪渣。该项目加强了社区对可持续污物处理的参与和所有权，并促进了女性赋权。该城市地方机构致力于在印度建立以社区为主导的污物处理模式，为实现该目标，还采用了 360 度全方位沟通模式，让公民和女性团体参与，并加强监管。

背景

伯翰普采用了《2018 年污物管理条例》(Faecal Sludge and Septage Management (FSSM) Regulations 2018)。根据该条例，所有粪罐车必须在污物处理厂处理粪便污物，违反者将遭受重罚。此外，城市地方机构还通过决议，与当地女性团体合作，推动机械化清污，并通过服务合同，运营和管理该市的污物处理厂。

Abstract

Berhampur is one of the oldest and most populous cities in the State of Odisha. The city does not have an underground sewer system which necessitated the implementation of a non-conventional Faecal Sludge and Septage Management (FSSM) method to manage the black water generated from the city. The Berhampur Municipal Corporation (BeMC) adopted an innovative, community-led and comprehensive approach engaging women's collectives in each component of the FSSM value chain. Women Self-Help Groups (SHGs) were engaged in building sanitary toilets for safe containment of faecal waste, promoting the mechanized emptying of septic tanks, operation and management of septage treatment plants and reuse of treated sludge. The initiative enhanced community participation and ownership for sustainable FSSM but also promoted women empowerment. The ULB also adopted a 360-communication approach involving citizens and women's collectives and strengthened regulations to achieve its goal of a community driven FSSM model in India.

Background Information

Berhampur has adopted the Faecal Sludge and Septage Management (FSSM) Regulations 2018. As per the Regulations, it is mandatory for all cesspool emptier vehicles to dispose faecal waste only at the treatment plant and non-compliance results in heavy penalty for operators. In addition, the ULB also passed resolutions to partners with local women's collectives for the promotion of mechanized desludging and also for the operation and management of the septage treatment plant in the city through a service contract.

起源

2017 年之前，伯翰普废物处理价值链的所有环节都存在缺口。由于没有足够的厕所，且缺乏社区参与，露天排便现象十分普遍。从厕所化粪池中倾倒的粪便污水被随意排放，污染水体和环境。更甚的是，由于公民不了解具体做法，废物处理项目缺乏社区参与。

通过女性团体参与社区和公共厕所的运营和管理以及粪污的收集、运输、处理和再利用，实现社区主导的可持续废物管理。本项目的主要目标是加强废物处理价值链的各个环节，以改善卫生和环境状况，并促进社区参与可持续卫生建设。本项目涉及基础设施发展、能力建设、政策制定、改善监测和创建有利环境。我们的目标是通过城市地方机构以及社区参与，实现我们预期的变化。

纵观整个废物处理价值链，尤其是在促进公民参与、支持社区厕所和处理厂管理服务方面，让女性自助团体参与其中是城市地方机构采用的一种独特方法。城市地方机构采用如用于交付和监控废物处理服务的门户网站等技术创新，协助女性团体开展工作，并通过减少周转时间、遵守安全协议等措施提高服务质量。此外，通过专门的宣传行动，使废物处理项目成为对话的启动者，专注于为公民提供关于机械化清洁的持续沟通。废物处理服务仅收取基础用户费用，使该项目得以可持续实行。

在伯翰普实施的废物处理项目中，其公共社区合作伙伴关系采用一种独特的女性主导模式，在废物处理价值链的各个环节都与女性团体进行合作。针对建造和运营社区厕所、运营和管理化粪池垃圾处理厂以及在民众中宣传树立废物处理行为意识等工作，所有女性团体均接受了相关的培训。城市地方机构受益于女性自助团体娴熟的劳动技能，同时，女性自助团体的收入水平也因各种就业机会得到提高。



Origins

Prior to 2017, there were several gaps in all components of the FSSM value chain in Berhampur. There was wide-spread open defecation in the absence of adequate toilets and lack of sufficient engagement with communities practicing open defecation. The faecal waste emptied from the toilet septic tanks were disposed indiscriminately polluting water bodies and the environment. Importantly, community engagement in FSSM was lacking because the citizens were unaware about the desired practices.

To implement community-led, sustainable FSSM practices, women collectives were engaged in the operation and management of community and public toilets, and in the collection, transportation, treatment and reuse of faecal waste. The key objective of the initiative is to strengthen each stage of the FSSM value chain for improved health and environment outcomes and to promote community engagement in sustainable sanitation. The approach considers infrastructure development, capacity building, adoption of policy, improved monitoring and creation of an enabling environment. The objective was to bring about the desired change through community participation and not just by the ULB.

Engagement of women SHGs across the FSSM value chain was a unique approach adopted by the ULB especially in promoting citizen's participation, supporting in service delivery through management of community toilets and treatment plants. Aiding the efforts of the women's collectives were several technical innovations like online portals for delivery and monitoring of FSSM services. The ULB enhanced the quality of service through less turnaround time, adhering to safety protocols, etc. It also focused

伯翰普为污物处理采用了一种以社区为中心、成本效益高、技术简单的可持续模式。除了提供如厕所使用和清污等污物处理服务收取基础用户费用外，女性自助团体还通过设立社区厕所报摊、处理厂托儿所和出售经处理的粪污制成的堆肥来产生额外收入。由国家资金以最低成本培训的女性自助团体，已成为城市地方机构的宝贵人力资源。

创新

该项目具有革命性意义，因为伯翰普是印度第一个实施污物处理的大城市，着重于让社区参与价值链的各个环节。让女性自助团体等社区组织参与整个污物处理的价值链中，这举措不仅具有独特性，更兼具开创性，因为从前这些都是男性技术资源人员从事的领域。女性现在与男性同伴一起并肩工作，并成为城市地方机构的合作伙伴。此外，伯翰普市政公司还为污物处理项目开展了一项名为“马拉苏尔（Malasur）”的特殊行动，以促使公民培养关键的行为。

在此之前，污物处理被认为是男性的领域，因此女性参与相关工作从未有先例。该项目的另一个挑战是，人们认为污物管理是一项“肮脏的”工作，并认为从事该工作是耻辱的。女性自助团体最初不愿进入该领域，并无法从该项目的合作中获得社会经济利益。然而，定期宣传和多元化的工作机会改变了她们的观念，她们迫切希望与城市地方机构建立合作关系。随着这些团体作为变革推动者参与到项目中，其社区理念也发生了变化。

成效

(a) 提高女性，尤其是城市贫困社区女性的社会经济地位；(b) 提高女性自助团体等社区团体的参与度以及社区对卫生设施的所有权；(c) 通过限制露天排便，合理处理粪污，让所有家庭均可使用厕所，以及开设污物处理厂，以提升水

on sustained communication on mechanised cleaning for the citizens through unique communication campaigns making FSSM a conversation starter. The FSSM services are provided based on user fees making it sustainable.

The public-community partnership in implementation of FSSM in Berhampur is a unique women-led model where the ULB partnered with women collectives in each stage of the FSSM value chain. Women collectives were trained to build and operate community toilets, operate and manage the septage treatment plant and also to spread awareness on desired FSSM behaviours among people. While the ULB benefitted with the skilled workforce of SHGs, the SHGs gained through enhanced income levels from varied livelihood opportunities.

Berhampur has adopted a cost-effective, community-centric, simple technology sustainable model for FSSM. While the FSSM services like toilet use and desludging are provided based on user fees, the women SHGs also generate additional revenue through kiosks in community toilets, and through establishment of nurseries in treatment plant sites and sale of compost from treated faecal waste. The SHGs are trained at a minimal cost from state funds and have emerged as a valuable human resource for the ULB.

Innovative Aspects

The initiative is revolutionary as Berhampur is the first major city in India to have implemented FSSM focusing on all aspects of the value chain engaging communities. Engagement of community based organisations like women's collectives across the FSSM value chain is not just unique but also ground-breaking as earlier it was the domain of male technicians. Women now work shoulder-to-shoulder with their male counterparts and have emerged as the ULB's partners in development. In addition, the BeMC also implemented a unique campaign on FSSM called 'Malasur' to engage citizens in adopting key behaviors.

Earlier, participation of women in FSSM was unheard of as it was considered to be a male domain. Another challenge was the perception regarding FSSM as 'filthy' work and the stigma associated with it. The women SHGs were initially hesitant to enter into this sector and were unable to conceive the socio-economic benefits to be gained from this partnership. However, through regularly sensitization and the possibility of diversified livelihood opportunities transformed their opinion and they were keen to be associated as partners with the ULB. With their engagement as change agents,

质；（d）改善所有城市，尤其是贫困社区的卫生状况。

印度政府通过其旗舰项目获取和监控污物处理的相关指标，并由外部机构独立核实。国家城市发展局（State Urban Development Agency, SUDA）通过收入水平、社会经济地位、参与度等指标，定性和定量评估了这一合作关系对女性自助团体的影响。市政层面还开展了独立的社会审计，按性别和收入组别分列数据。

伯翰普是奥里萨邦第一个在 2018 年将 700 个女性自助团体及其 7000 多名成员合并成城市联合会（City Level Federation, CLF）的城市。城市联合会为这些团体提供了一个有利的平台，与城市地方机构合作提供额外的卫生服务。与绩效挂钩的机械化清污激励措施不仅提升了城市的机械化清污能力，并且为女性自助团体提供了额外的收入。

通过咨询市民，尤其是女性市民的意见，污物处理项目根据城市各区的优先任务进行实施。女性团体充当伯翰普市政公司和社区之间的沟通桥梁，并传达他们的担忧。自助团体确保满足残疾人和落后社区等弱势群体在厕所使用、补贴等方面的需求。从厕所的建设和使用到处理厂的运营，整个污物处理价值链都咨询了与伯翰普市政公司合作的自助团体城市联合会的意见。

该项目的创新点聚焦在城市贫困社区和女性身上。城市地方机构优先考虑让女性群体开发基础设施和提供服务，并参与到整个污物处理价值链中，从而通过工作机会、社区领导以及创造可持续的环境和卫生状况来促进女性赋权。

来自城市贫困社区的 7000 名女性自助团体成员直接受益于这种合作关系，其个人和家庭收入均得到提高。城市地方机构和女性自助团体合作提供的污物处理服务也对伯翰普的 40 万公民产生了积极的影响。

the perception of community also changed.

Desired Change or Outcome

(a) Enhanced socio-economic status of women especially from urban poor communities; (b) Increased participation of communities like women's collectives and community ownership of sanitation facilities; (c) Improved water quality due to curb in open defecation and indiscriminate disposal of faecal waste with all households having access to toilets along with the operation of the septage treatment plant; (d) Better health outcomes for all especially of urban poor communities

The FSSM related indicators are captured and monitored by the Government of India through its flagship programme and independently verified by an external agency. The impact of the partnership on women SHGs is qualitatively and quantitatively assessed by the State Urban Development Agency (SUDA) through indicators like income level, socio-economic status, participation, etc. Independent social audits are also conducted at the municipal level. The data is disaggregated by gender and income group.

Berhampur was the first city in the State of Odisha to federate the women SHGs into a City Level Federation (CLF) in 2018 with 700 SHGs and 7000 plus members. The CLF provided a conducive platform to the collectives to provide additional sanitation services in partnership with the ULB. Performance linked incentives for promotion of mechanized desludging among citizens was another initiative that not only increased mechanized desludging in the city but also provided an additional source of income to the SHGs.

The FSSM plan was implemented as per the priority of each ward in the city where the citizens, especially women, were consulted. Women collectives acted as a link between BeMC and communities, have conveyed their concerns. The SHGs ensured that the needs of disadvantaged groups like people with disabilities and backward communities are met in terms of access to toilets, subsidies, etc. The CLF of SHGs engaged with BeMC was consulted across the FSSM value chain, from toilet construction/use to the operation of the treatment plant.

The innovation focuses on urban poor communities and women. Women's groups were given preference by the ULB for both infrastructure development and delivery of services and were engaged across the FSSM

保持创新的措施

除了污物处理服务收取的用户费用外，社区厕所的增值店铺、处理厂的托儿所以及出售经处理的粪便堆肥，预计均可作为自助团体带来收入。城市地方机构每月向自助团体支付 13 万卢比用于提供运维服务。

处理厂处理过的废水和污物被重新用于环境绿化和园艺堆肥，从而实现资源回收。这些女性团体现在已经在处理厂附近建立了一家托儿所，增加了创收途径。

经验

伯翰普为污物处理采用了一种以社区为中心、成本效益高、技术简单的可持续模式，让女性参与整个价值链，其他具有类似背景的城市很容易复制这种模式。这些城市可以采用伯翰普市政公司的政策和制度框架以及服务合同来聘用女性自助团体。此外也可落实由女性领导的宣传行动，在市民中树立正确的污物处理行为观念。该城市可通过城际研讨会、知识平台和规划展示来分享其经验，让更多人见证这种由女性推动整个价值链的污物处理模式。

value chain for thus promoting women empowerment through livelihood opportunities, community leadership and generating sustainable environment and health outcomes.

7000 women SHG members from urban poor communities have directly benefitted from this partnership through enhanced individual and household level incomes. Four lakh citizens of Berhampur have also been positively impacted through the provision of FSSM delivered by the ULB and the women SHGs.

Measures to sustain innovation

Besides the user fee charged for FSSM services, establishment of value-added shops in community toilets and nurseries at the treatment plant site and sale of compost from treated faecal waste are expected to generate revenue for the SHGs. The SHGs are paid INR 1.3 lakh per month by the ULB for provision of O&M services.

Both the treated wastewater and sludge at the plant are being reused for landscaping and as compost for gardening respectively leading to resource recovery. The women collectives have now started a nursery adjacent to the septage treatment plants, which has created an avenue for additional revenue generation.

Learning Aspects

Berhampur has adopted a community-led, cost-effective, simple-technology sustainable model for FSSM engaging women across the value chain which could be easily replicated by other cities with similar profiles. The cities can adopt the policy and institutional framework, service contracts adopted by BeMC in engaging women SHGs. The communication campaigns led by women for promoting desired FSSM behavior among citizens is another area which could be implemented. The City could share the learning through inter-city workshops, knowledge platforms and planning exposure visits for others to witness this women driven FSSM model across the value chain.

该项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 5：实现性别平等，增强所有妇女和女童的权能
- ◆ 目标 6：为所有人提供水 and 环境卫生并对其进行可持续管理
- ◆ 目标 9：建设有韧性的基础设施，促进包容性的可持续工业化，推动创新
- ◆ 目标 13：采取紧急行动应对气候变化及其影响

(2) 《新城市议程》

- 为所有公民提供基本生活服务
- 确保所有公民机会均等且不受歧视
- 为应对气候变化，采取行动减少温室气体排放

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 5: Achieve gender equality and empower all women and girls
- ◆ Goal 6: Ensure availability and sustainable management of water and sanitation for all
- ◆ Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- ◆ Goal 13: Take urgent action to combat climate change and its impacts

(2) New Urban Agenda

- Provide basic services for all citizens
- Ensure that all citizens have access to equal opportunities and face no discrimination.
- Take action to address climate change by reducing their greenhouse gas emissions

印度尼西亚 万隆
Bandung, Indonesia

公共卫生署通过 OMABA 烹饪中心解决 儿童营养不良和发育不良的问题

**The Roles of Public Health Service through OMABA
Cooking Center for Managing Malnourished and Stunting
Children**



城市基本信息

人口规模: 1,699,719
人口增长率 (%) : 0.76
面积 (平方公里) : 1,677
人口密度 (人 / 平方公里) : 14,795
人均国内生产总值 (美元) :
基尼系数: 0.43
支柱产业: 工业、贸易、旅游业、创意产业等

BASIC CITY DATA

Population size: 1699719
Population Growth Rate (%): 0.76
Surface Area (sq.km): 1677
Population Density (people/sq.km): 14795
GDP Per Capita (U.S.\$):
GINI Index: 0.43
Main Source of Prosperity: Industry, creative industry, trade, tourism, agriculture, etc.

摘要

印度尼西亚 5 岁以下儿童极高的营养不良和发育不良患病率引起了全球的关注。2013 年，印度尼西亚全国 5 岁以下儿童发育不良患病率为 37.21%。颇具讽刺意味的是，除 3T 地区（边境地区、最偏远地区、落后地区）外，大城市也出现了这样的情况，例如西爪哇省省会城市万隆。

万隆公共卫生署（Puskesmas）采取的创新之举是利用 OMABA 计划解决儿童营养不良和发育不良问题，这既是一项突破，也是对过往失误的纠正。利益相关方共同吸取经验教训并参与实践，终于在几年后成功降低了卫生署管辖地区的儿童发育不良患病率和死亡率。OMABA 提供了补充食品，并由家庭福利项目局（PKK）通过摩托车的将食物送给目标儿童。

OMABA 项目产生了重大影响，除了达成减少营养不良率的主目标外，该项目还助推了社区健康问题方面的妇女赋权。

背景

保证健康生活、增进人类福祉是可持续发展目标议程中的重要目标。经总统批准的 2020-2024 中期国家发展计划要求改善大众营养状况。计划的目标是减少营

Abstract

The prevalence rate of malnourished children and stunting children under-five in Indonesia is a global concern. In 2013, the national prevalence of malnourished children was 12.1% while prevalence of stunted children was 37.21%. Ironically, it doesn't merely occurs in 3T areas (frontier, outermost, backward), but also was found in metropolitan areas such as Bandung, the capital city of West Java Province.

The innovation made by Riung Bandung Public Health Service (Puskesmas) to overcome malnourished and stunting children through OMABA program, is a breakthrough which corrects the failures. Collective learning among stakeholders and engagement in practice have succeeded in reducing malnourished rate at Puskesmas cover areas after years. OMABA's initiatives were processing supplementary food to be delivered to targeted children with a motorcycle taxi by agent of Family Welfare Program (PKK).

OMABA has shown great impact. Besides its main purpose of reducing malnourished rate, it also provided women empowerment in handling community health' problems.

Background Information

Ensuring a healthy life and increasing human welfare is a goal in SDGs agendas. The Medium-term of National Development Plan (RPJMN) for 2020-2024 appointed by Presidential regulation, was proclaiming the improving of public nutritional status. The object of it was to reduce prevalence rate of malnourished and stunted children. At regional level,

营养不良和发育不良儿童的比率。在地区层面改善营养状况也列入战略项目中。因此，当地政府年度预算应优先应对该方面。

起源

“补充食品恢复计划”（PMT-P）为5岁以下的目标儿童提供饼干或婴儿配方奶粉。事实上，这项计划并不完全有效，反而带来了其他发现：接受这一援助项目的贫困或弱势群体需要更多帮助。迪弗洛（Duflo）和巴纳吉（Banerjee）（2011）指出：即使是发放的营养补给品，穷人也是能感觉到味道好坏的。在我们管辖区域，营养饼干大多没人吃，婴儿配方奶粉会被卖掉。

我们的项目就是基于以下策略：补给食物不仅要送到人们手中，更要让收到的人喜爱并全部吃完。这一目标分两步实现。首先，我们必须着力把 PMT-P 食品变成加工食品，在确保营养的同时，还要考虑到口感。

其次，我们必须有运送食物的能力，并确保目标儿童自愿吃完食物。

发现 PMT-P 计划基本无法取得效果后，利益相关方共同探讨并吸取了其中的经验教训，这才有了我们的项目。OMABA 烹饪中心归根到底是一个社区实践项目，利益相关方（政府行为体、公众和国有企业）共同重新设计了该项目。我们设立了集体烹饪中心，让居民轮流准备加工食品。烹饪中心的活动不仅强调公众参与，更是一种赋能实践。

我们的项目是一个公众、社区和国有企业携手合作的项目。Cisaranten Kidul 健康委员会通过卫生署（Puskesmas）发挥政府方的作用，确保 PMT-P 计划顺利推进，然后给出结果，例如改善公众营养状况。PT Pertamina TBBM Bandung 集团作为企业方，承担社会责任，通过赋能措施和融资，改善地方经济和环境质量。最后，家庭福利项目局作为当地社区方，将附近地区的最初意见作为改进计划的考

improving nutritional status has been a list of strategic programs. So, it should be a priority then accommodated in The Local Government Budget (APBD) annually.

Origins

Supplementary Food for Recovery Program (PMT-P) is as simple as to give a biscuit or infant formula to the target. In fact, it doesn't completely work. On contrary, it leads to other finding: people in poverty or vulnerability who gets the aid program, need more. Duflo and Banerjee (2011) said that poor people seldom have a taste even it is nutritious food. This happens in our sub-district, nutritious biscuit mostly unused and infant formula traded.

Our initiative is on a strategy: the supplementary food is not only conveyed, but also totally eatable and targeted at children who would be fond of it. It should be eaten up and loved by them. There are two steps to achieve this goal. First, we must focus on improving the PMT-P into processed food and considering about the taste in addition of nutrition.

Second, we must be able to deliver the food and ensure the targeted children would eat it up without compulsion.

Our initiative emerged from a collective learning among stakeholders, after we found an ineffectiveness about PMT-P program as general. Eventually, OMABA cooking center is a community practice which involves stakeholders' (government actors, public and state-owned enterprises) participation in redesigning the program. We build collective cooking center for residents to take turns to prepare processed food. Through activity in cooking center, we not only emphasize a public participation, but also an empowerment practice.

Our initiative involves public, community and state-owned enterprises collaboration. Cisaranten Kidul Health Committee, through Puskesmas, plays a role as the government actor who ensures the running of PMT-P program, then gives the outcome, i.e. improving public nutritional status. PT Pertamina TBBM Bandung was involved as corporate with social responsibility who improves local economic and environment qualities through empowerment practices and financing. Finally, PKK agents in Cisaranten Kidul play the role as a local community who improves the program with consideration on the original position of vicinities.

Initially, program funding was sourced from government spending managed by Puskesmas. However, the modifications that make this program

虑因素。

起初，计划资金来自政府拨款，这笔款项由卫生署（Puskesmas）管理。利益相关方十分关注创新调整举措，因为这让 PMT-P 计划变成了一个独一无二的项目。PT Pertamina 资助的社区赋能工作，让参与 OMABA 烹饪中心的居民逐渐走向财务独立。因此，这一创新有机会变得更具可持续性。他们管理着一个花园，为烹饪中心提供原料，同时生产一些在市场上销售的产品，例如冷冻食品和糕点。

创新

可以说，我们的创新理念上更具进步性。我们在共同吸取经验教训和反思的基础上，对现有计划（PTM-P 计划）进行了调整。当然，制定项目计划期间，我们需要勇敢面对考验和错误。这项创新还为解决其他地区的营养问题提供动力并开辟了道路。目前，所有地区都根据当地情况采用不同的方法进行营养管理，OMABA 鼓励其他地区进行创新，提供更好的服务，为营养不良的儿童提供补充食品。

我们认识到，推行创新的过程中，我们面临着许多巨大挑战。其中的主要障碍是资金和志愿者的可持续性。受新冠疫情影响，政府资金更多关注于抗疫，其他领域难以获得拨款。如需将项目用于他处，则因为社会状况与社区权力的不同，而需要人为灵活处理问题，这就需要耐心和技巧。

成效

我们的创新项目促使战略计划取得了出色的成果，成功提高了生活质量，尤其是在儿童发育发展方面。前往社区综合健康服务站（Posyandu）称重的幼童由 2013 年的 74.3% 增加到了 2019 年的 78.89%。在 2013 年，营养不良儿童有 29 例。到了 2019 年，营养不良儿童的数量已经清零。

innovation so unique are the concern of stakeholders. Through a community empowerment funded by PT Pertamina, residents involved in OMABA cooking center are slowly directed to independence in financing. So the innovation has a great opportunity to be sustainable. They manage a garden as a supply for the cooking center and also produce some marketed products such as frozen food and pastries.

Innovative Aspects

It can be said that our innovation is more evolutionary as concept. Modifications based on a collective learning and a reflective process on problems in field, are made toward existing programs (PTM-P). Of course, the process of developing this program requires a courage in facing trial and errors. This innovation also provides motivation and patterns of handling nutritional problems in other regions. Nutrition management currently exists in all districts with different approaches according to local conditions, and Omaba encourages new innovations in other districts to give better services on supplementary food program for malnourished children.

We recognize that the biggest challenges in carrying out this innovation are quite numerous. The main obstacle is the sustainability of funding and volunteer. Associated with the COVID-19 pandemic, government funding is to focus on handling Covid, and thus other sources are difficult to obtain the funding. For application in other locations, social conditions, community empowerment are not the same because they require personal handling. This personal approach requires patience and skill.

Desired Change or Outcome

Our initiative has led on outcomes of strategic program in order to improved quality of life, specifically child development. As a proof, the participatory aspects of the toddler weighed in Community Integrated Health Services (Posyandu) increased from 74.3% in 2013 to to 78.89% in 2019. Children with severely wasted cases also decreased from 29 cases in 2013 to 0 cases in 2019.

Our program also became inspirations for other districts to replicate our activities in PMT-P program by doing some adjustments regarding their local specific characters.

Data measurement was carried out on the variable nutritional status of children with a control over age and weight of children growth. It

我们的项目也鼓励了其他地区复制我们的措施，并在此基础上为适应自身特点而做出调整。

在控制年龄和体重增长变量的情况下，测量了儿童各方面的营养状况数据。数据测量工作由市政府下属的卫生署通过本区卫生委员会组织。这些数据可供地区级和国家级使用。

为改善营养状况，我们不仅要检查营养不良病例减少的情况，还要制定福利的质量标准，教育穷人养成健康的饮食模式和养育方式。此外，我们还尝试利用摩的（OMABA）扩大 PMT-P 计划的覆盖面，并为成员提供营养和创业方面的培训。

烹饪中心由卫生署 (Puskesmas) 发起，吸纳了雅加达北部科嘉地区相似的概念。然而，如果没有家庭福利项目局作为社区一员提供支持，我们就无法很好地吸收这些经验教训。项目的不同之处在于妇女在应对儿童问题时往往真诚又富有同情心。PT 提供资金支持和赋能。Pertamina TBBM Bandung 则是我们企业社会责任项目的合作伙伴。

我们的创新服务 Riung Bandung 的一个区，主要是一个社区实践项目。这种形式鼓励卫生署（Puskesmas）和家庭福利项目局开始创新。

我们的项目直接改善了我们区 5 岁以下儿童的营养状况。该项目还为我们的成员提供了便利，这些成员多是女性，帮助他们掌握食品制作技术，激发了他们的创业热情。预计我们的创新可供其他地区和其他层级的政府学习效仿。

保持创新的措施

我们认为，在了解公众需求、建立情感纽带，以及促使利益相关方做出坚定承诺等方面，特别是在为营养不良儿童建立快速简短的政策制度方面，中央政府应当发挥作用，对改革创新报以开放的态度。这也是未来继续这一创新的关键所在。



was organized by the health committee in our district through the role of Pukesmas, which is part of the city government. The data can be used in regional and national contexts.

As a part of improvement of nutritional status, we need not just to look over the decrease of the cases but also to develop a quality access to the well-being with education of a healthy feed pattern and parenting for the poor. In addition, we have tried to improve the distribution of PMT-P program with the utilization of taxi motorcycle (OMABA) and have provided training for members in the fields of nutrition and entrepreneurship.

Cooking center was initiated by Puskesmas as learning by imitating from similar concept in Koja, North Jakarta. However, the learning is impossible to be adopted without the support from the roles of the PKK agents as community members. The nuances coming from an involvement of women is their sincerity and compassion in handling a children case. Supportive in funding and empowerment coming from PT. Pertamina TBBM Bandung as our partnership in corporate social responsibility project.

Our innovation focuses on a community of practice in the urban village of Riung Bandung, even though our coverage area is a district of the city. This form caused the initiation of the innovation coming from Puskesmas and PKK agent which located in the area.

As directly, our initiative has improved a nutritional status of children under-five in our district. The initiative also has facilitated our members who are almost all women, with food producing skill and entrepreneurship passion. We expect that our innovation can be learned in other places and levels.

Measures to Sustain Innovation



经验

我们与 OMABA 烹饪中心的合作项目能够在其他地区加以复制推广。我们的项目已经在打横城的塔曼萨利地区复制了。我们也于 2016 年被邀请到玛琅城进行知识与实践分享，当地政府对采用 OMABA 项目很感兴趣。

万隆市其他区域也开始复制 OMABA 项目的经验，当地政府支持家庭福利项目局准备食品补助，并派发给目标儿童。为支持万隆市政府解决儿童发育不良问题，家庭福利项目局的负责人在 2020 年设立了名为“万隆回应”的创新项目，旨在通过安全健康食品消灭发育不良。新创设的项目与 OMABA 类似，都是为孕妇、处于哺乳期的妇女以及 2 岁以下的儿童提供营养食品。

我们希望能有更多地区和政府采纳我们的创意，并为利益相关方提供灵感，帮助他们制定政策。

We believe that willingness to listen to the idea of change in understanding public needs, emotional bonding and strong commitment from stakeholders, especially those establishing brief policy founding system for malnourished children, with this role be hold by central government, are the keys to sustain our innovation.

Learning Aspects

We think that our initiative is with Omaba cooking center being able to be replicated in other places. OMABA concept has been replicated in Puskesmas Tamansari, Tasikmalaya City. We are also open to share knowledge and best practice as in 2016 we were invited by Malang City Government whom declared their interest to adopt the OMABA idea.

Other districts in Bandung City also developed a replicate of Omaba where they empowered PKK agents to prepare supplemental food and delivered it directly to targeted children. As a support to Bandung City Government's declaration to overcome stunting, the leader of PKK has made an innovation called Bandung' in response to overcome stunting using health and safety food (BANDUNG TANGINAS) in 2020. This program resembles Omaba to process nutritional food for pregnant women, breastfeeding mothers and children under two years.

We hope that our innovation can be adopted more over and become a inspiration for stakeholders to create a policy.



项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 2: 消除饥饿, 实现粮食安全, 改善营养, 促进可持续发展
- ◆ 目标 3: 确保健康的生活方式, 促进各年龄段人群的福祉
- ◆ 目标 5: 实现性别平等, 增强所有妇女和女童的权能
- ◆ 目标 11: 建设包容、安全、有抵御灾害能力和可持续的城市及人类住区

(2) 《新城市议程》

为所有公民提供基本生活服务

Relevance of the Initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- ◆ Goal 3: Ensure healthy lives and promote well-being for all ages
- ◆ Goal 5: Achieve gender equality and empower all women and girls
- ◆ Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

(2) New Urban Agenda

Provide basic services for all citizens

黎巴嫩 丹尼区

Dannieh, Lebanon

市民参与抗击新冠肺炎疫情的应急响应计划

Engaging the Citizen to Be Part of the Emergency Response
Plan to Fight against COVID-19



城市基本信息

人口规模：245,000
人口增长率（%）：38.00
面积（平方公里）：364
人口密度（人 / 平方公里）：1,884
人均国内生产总值（美元）：1,000
基尼系数：0.5
支柱产业：旅游业和农业

BASIC CITY DATA

Population size: 245000
Population Growth Rate (%): 38.00
Surface Area (sq.km): 364
Population Density (people/sq.km): 1884
GDP Per Capita (U.S.\$): 1000
GINI Index: 0.5
Main Source of Prosperity: Tourism and agriculture

摘要

在公民社会组织（CSOs）的支持下，丹尼区城镇联盟与由教育水平和专业水平较高的青年志愿者组成的 15 个委员会制定了一套应急预案，以应对新冠疫情带来的影响，遵守可持续发展目标，并实现丹尼区城镇联盟目标，即让公民（特别是年轻人）共同参与治理，以弥补人员与资金的短缺。新冠疫情加剧了各方面的挑战，以下委员会将致力于确保民众的需求得到满足：

紧急救援服务委员会、志愿医生委员会、护士委员会、运送服务志愿者委员会、呼叫中心委员会、联盟警察支持委员会、卫生委员会（消毒）、媒体与传播委员会、指导与方向委员会、数据与统计委员会、跟踪与监测委员会、后勤支持委员会。

各城镇领导人每天跟进市级小组的工作情况，并向城镇联盟报告。

背景

丹尼区举办了一场会议，并邀请市议会出席。会议同意设立危机小组，并得到了有关部门、内务部和各城镇政府的批准。该危机小组有权开展实地工作，并根据市政决定采取必要措施。

起源

丹尼区是一个资源丰富的地区，但在



Abstract

In an attempt to face the repercussions of COVID-19, in line with the SDGs and the goal of the Union of Dannieh Municipalities to engage the citizen in the governance, especially the youth, as a way to cover the shortage in staff and funding, and with the support of the CSOs, the Union of Dannieh Municipalities had established an Emergency Response Plan with 15 committees of volunteers from youth with a high level of education and specialization. These committees worked to assure the needs of the residents despite the already challenges exacerbated by the crisis as following:

Emergency and Relief Service, Volunteer Doctors Committee, Nurses Committee, Committee for Volunteers for Delivery Services, Call Center Committee, Union Police Support Committee, Health Committee (sterilization), Media and Communication Committee, Guidance and Orientation Committee, Data and Statistics Committee, Follow-up and

黎巴嫩经济危机的影响下，该地区十分贫困。丹尼区面临着许多挑战：经济具有季节特征，依赖农业和旅游业，在冬季会受到影响；丹尼区拥有大量受过教育的年轻人，但失业率很高；丹尼区城镇联盟主要依靠政府提供资金（独立的市政基金），但前段时间政府停止拨款，联盟的工作流程受到了影响。

起初，该项目是为应对新冠疫情带来的挑战而设立。但后来，其成为落实联盟工作的单位，该项目采用参与式方法，邀请年轻人共同参与治理工作，以根据《2030年议程》的愿景推进项目，提高当权者的问责性。这些年轻人根据自己的期望改变政策和策略，同时满足其所在社区的利益。

我们邀请年轻人成立危机小组，帮助受到疫情封锁影响的人。这些年轻人根据自身专长和偏好分成了不同的委员会（15个委员会），每个委员会都设有一名协调员和几名志愿者，前者领导具体工作，后者共同完成任务。城镇联盟为他们提供了必要的设备、交通运输工具和保护办法，让他们和谐地开展工作。

就该地区而言，此项目在活动、参与人员和成果方面都非常具有创新性。

在内政部、公共卫生部的支持下，丹尼区城镇联盟协调其下属的17个城镇，与民间团体的积极人士进行合作。丹尼区当地居民受益于项目的各个方面，包括核酸检测、跟踪记录、交付服务和其他需要的服务。

该项目的主要资金由丹尼区城镇联盟提供，并得到该地区一些社会积极人士的支持。他们还根据自己的领域（医生、护士、媒体人物、年轻人）提供了其他类型的支持，食物则由该地区的富人提供。

创新

这是一个革命性的项目，因为无论是在新冠疫情期间，还是在此前类似的情况

Monitoring Committee, The logistical support committee. Heads of municipalities daily follow-up of municipal cells and deposit them to the Union.

Background Information

A session was held, attended by the council, where it was agreed to establish the Crisis Cell, and approval was obtained from the relevant ministry, the Ministry of Interior and Municipalities. The crisis cell has the power to work on the ground and take the necessary measures depending on the municipal decision.

Origins

Dannieh is a region rich in its resources but suffers from deprivation that has intensified with the economic crisis that affected the country. The challenges are many, Dannieh has a seasonal economy that depends on agriculture and tourism, and it is affected during the wintertime. Dannieh is characterized by a high number of young, educated people, but also a high rate of unemployment among them. The Union of Dannieh Municipalities relies on governmental payments (the Independent Municipal Fund), which stopped from a while ago and affected the workflow in the Union.

In the beginning, the initiative started to respond to the challenges of the COVID-19. But, later on, it became a unit to implement the Union's work within an integrated plan that relies on a participatory approach and inclusion of youth in the governance to implement projects and bring accountability to those in power, under the vision of the 2030 Agenda. They made changes in the policies and the strategies adopted to fit with their aspirations while serving the interests of their community.

We have invited the youth to form a Crisis Cell aiming to assist people affected by the lockdown. They were divided according to their specializations and preferences into 15 different committees, each of which has a specific work headed by a coordinator with several volunteers to perform the tasks assigned in a participatory approach. The Union has facilitated for them the necessary equipment, means of transportation, and methods of protection. They were like an orchestra working harmoniously.

As for the region, the initiative can be considered as very innovative in terms of activities, people involved, and outcomes.

The Union of Dannieh municipalities has coordinated with the 17

下，该地区从未推行过类似的项目。这是各方共同努力的成果，从某种程度上而言，这是受到了全国各地成功项目的启发。该项目最重要的成员是年轻人群体，他们是规划和执行工作的主要力量。让年轻人参与进来符合我们以往在可持续发展目标方面的经验。

阻碍我们推进创新的主要障碍是当地居民对新冠疫情缺乏认识。我们需要耗费时间和行动说服人们采取安全措施、戴口罩、消毒和保持社交距离。此外，封锁影响了人们的工作和收入，增加了政府推行封锁措施的难度。资金也是项目创新面临的一大挑战，因为预算有限，但需求过多。

成效

该项目的主要成果是让年轻人有机会在他们的社区中发挥作用，并对自己和他产生责任感。如今，这些年轻人已成为联盟的一分子，他们参加定期会议，并为发展项目提出建议。此外，与新冠疫情前期相比，该项目的效率有所提高。现在该项目更加可信，参与人数更多，覆盖区域更广。当地居民合作的意愿提高了，且意愿更强。

危机小组的一个委员会负责收集数据。数据存放于共享文件夹中，收集了受新冠疫情影响的当地居民信息。这些数据涵盖了多项指标，如年龄、性别、收入、残疾与否等。分析这些数据有助于评估项目的成果和已实现的变化。可根据要求提供数据。

该项目依赖技术的使用，这在地区被认为是一大创新。共享文件夹和WhatsApp 群组促进了危机小组内各委员会之间以及与他人之间的沟通。必要时采用传统信息传播方式，危机小组成员与当地居民建立了联系和交流网络。

如前所述，年轻人是项目的主要力量，他们能够与社区的其他组成部分融为一体。该项目鼓励年轻人更加积极地参与其中，从参加会议、提出想法到实施项目，

municipalities that were under its umbrella, and has cooperated with active people in the civil society, supported by the Ministry of Interior and Municipalities, as well as the Ministry of Public Health. Locals and residents of Dannieh area have benefited from this initiative in terms PCR tests, follow up, delivery services, and other services upon needs.

The main funding of the initiative was delivered by the Union of Dannieh Municipalities and supported by some social active figures in the area. Other types of support were offered by activists from civil society, each in his domain (doctors, nurses, media figures, youth) food supplies were provided by wealthy people in the region.

Innovative aspects

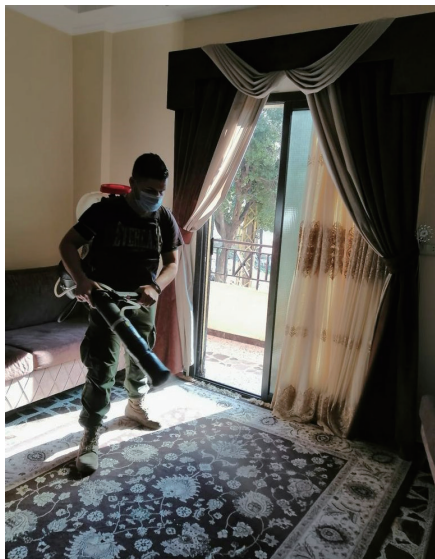
The initiative can be considered as revolutionary because nothing similar has happened in the area whether during the COVID-19 crisis, or in similar situation that occurred before. It was the result of combined efforts and somehow inspired by successful initiative around the country. The most significant component of this initiative is the young community that has taken major part in the planning and the implementation. Involving the youth was aligned with our previous experiences with SDGs.

The main obstacle that has hindered our innovation from progress is the lack of awareness of locals and residences about COVID-19. We needed time and effort to convince people to take safety measures, wearing masks, sanitizing, and applying social distancing. Moreover, the lockdown has affected people's work and income which made it harder to apply lockdown guidelines imposed by the government. Financing was also a challenge for our innovation because the budget is limited and the needs are excessive.

Desired change or outcome

The main outcome of the initiative is to give the youth the opportunity to play a role in their community and to feel responsible of themselves and others. They are now a part of the Union; they participate in its periodic meetings as well as in proposing development projects. Moreover, the efficiency of the initiative has improved compared to the beginning of the crisis. It is now more credible and includes more people and cover larger areas. Locals and residents became more cooperative and aware.

Data was collected by one of the committees inside the cell, it was a shared folder that included information about local and residents, that were



充分展示了他们的能力和技能。

该创新让人们看到了边缘群体，即收入有限或者没有收入的人群、残疾人、妇女和老年人。该项目覆盖了丹尼区的大部分地区，并且影响了当地大多数社区。

该项目影响了几乎整个地区，甚至包括不属于联盟的村庄。项目优先关注边缘群体，包括老年人、妇女、残疾人。这类群体占项目关注对象的 60%，暂时受影响的家庭占 30%，其他人群占 10%。

保持创新的措施

在人力层面，该项目保证了可持续性，因为团队成员主要是年轻人；但是资金方面无法保证，因为项目取决于内部和外部拨款。需要注意的是，联盟正努力在这一层面尽可能保持一致。

经验

所有关于该项目的信息都分享在联盟网站上，每个人都可访问这些信息，因此，其他城市可以从我们的经验中获益，并从后续步骤中获得启发。此外，我们还在多个网站上发布总结经验的视频，让更多人了解已完成的工作。联盟主席也在当地和国际社区的会议、演讲中提到该项目。口口相传仍是信息传播的主要途径，年轻人在社区内外分享信息，促进了项目的普及。

mostly affected by COVID-19 consequences. The data has covered different criteria such as age gender, income, disabilities and others. Analyzing this data has help assessing the outcome of the initiative and the changes that have been realized. It is available upon request.

This initiative had relied on the use of technology, which is considered an innovation in the area. The use of shared folders and WhatsApp groups, has helped facilitating communication between committees inside the cell on hand and with people on other hand. When necessary, traditional messages were used and members of the cell have created connections and networks with local and residents.

As previously mentioned, youth were the main pillar of this initiative, they were able to integrate with other components of the community. It encouraged them to be more active and involved, and it has shown their abilities and skills. They were attending meeting, suggesting ideas and implementing projects.

The innovation had shaded the light on the marginalized people by which we mean people with limited or no income, disable people, women and elderly. It has covered the greater part of area of Dannieh, and addressed the majority of communities there.

The initiative had affected almost the whole region, even villages that are not under the Union's umbrella, the priority of work was dedicated to the marginalized groups including the elderly, women, and people with disabilities, 60%, the temporarily affected families 30%, others 10%.

Measures to sustain innovation

On the human level sustainability is guaranteed due to the commitment of team members which are mainly youth. However, it cannot be defined in terms of financial because it will depend on internal and external funding as Union is trying to be consistent at this level as possible.

Learning aspects

All information about the initiative is shared on the website on the Union, and it is accessible by everyone. This means that other cities can benefit from the experience and get inspired by the steps followed. A video that summarizes the experience has also been published on different networks, and more people became aware of the work that has been done. The president of the Union due to his position, has also mentioned the initiative in

his speeches and conferences held with local and international communities. The mouth to ear word remains the main way to spread information, the youth have contributed to sharing information in their communities and away.

项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 3: 确保健康的生活方式, 促进各年龄段人群的福祉
- ◆ 目标 8: 促进持久、包容性的可持续经济增长, 促进充分的生产性就业, 促进人人有体面工作
- ◆ 目标 10: 减少国家内部和国家之间的不平等
- ◆ 目标 11: 建设包容、安全、有抵御灾害能力和可持续的城市及人类住区
- ◆ 目标 16: 创建和平、包容的社会以促进可持续发展, 让所有人都能诉诸司法, 在各级建立有效、可问责和包容的机构

(2) 《新城市议程》

- 确保所有公民机会均等且不受歧视
- 加强城市降低灾害风险和影响的能力
- 完全尊重难民、移民、境内流离失所者的权利, 无论其处于何种移徙状态
- 加强社会联系和支持创新、绿色倡议

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 3: Ensure healthy lives and promote well-being for all ages
- ◆ Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- ◆ Goal 10: Reduce inequality within and among countries
- ◆ Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
- ◆ Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

(2) New Urban Agenda

- Ensure that all citizens have access to equal opportunities and face no discrimination
- Strengthen resilience in cities to reduce the risk and the impact of disasters
- Fully respect the rights of refugees, migrants and internally displaced persons regardless of their migration status
- Improve connectivity and support innovative and green initiatives



马达加斯加 塔那那利佛
Antananarivo, Madagascar

通过适应性生产系统构建城市粮食系统韧性

Building Resilience in the City Food System of Antananarivo
Through Adapted Production Systems



城市基本信息

人口规模: 1,500,000
人口增长率 (%): 4.60
面积 (平方公里): 88
人口密度 (人 / 平方公里): 29,659
人均国内生产总值 (美元): 461
基尼系数: 0.37
支柱产业: 工业、贸易、旅游业、农业。

BASIC CITY DATA

Population size: 3000000
Population Growth Rate (%): 4.60
Surface Area (sq.km): 88
Population Density (people/sq.km): 29659
GDP Per Capita (U.S.\$): 461
GINI Index: 0.37
Main Source of Prosperity: Industry, Trade, Tourism, Agriculture,

一、通过“我的农场 (I FARM)” 分享学习城市农业实践

摘要

塔那那利佛市拥有 150 万居民，如今市政府正在推广城市农业。为此，我们利用新兴技术开发了一款名为“Mamboly Aho”（英文译名: My Farm。中文译名: 我的农场）的移动应用程序。顾名思义，该项目旨在将当地居民与塔那那利佛的农业联系起来。

首先，我们通过“我的农场”应用程序与市民分享城市农业的必要知识，帮助他们在家，甚至在工作或学校项目中开展、维护和完善他们的农业项目。其中涉及到的主题有: 在小城市空间范围内种植蔬菜，小规模饲养和堆肥。然后，成员可以在线分享各自的项目及想法，并通过论坛与社区其他成员进行讨论。他们甚至可以撰写文章分享经验。该项目可在无需实际接触的情况下，与大家一同分享和学习城市农业实践，并确保粮食系统具有抗灾的韧性。

背景

今年，在新市长提出的“Veliranon'Iarivo”的五年计划中，一个主要目标就是使塔那那利佛成为一个绿色城市。为了实现这一目标，计划将增加、创建和维护新的绿色空间，支持公共空间的管理，实施绿色空

Share and Learn about Urban Agriculture Practices through 'Mamboly Aho' (I FARM)

Abstract

Nowadays, the Municipality of Antananarivo is promoting Urban Agriculture (UA) in the city of 1.500.000 inhabitants. For that, the city uses new technology by developing the mobile application named “Mamboly Aho” which is translated as “I Farm” in English. As the name suggests, our initiative aims to connect people to farming in Antananarivo.

At first, through “Mamboly Aho”, the city shares necessary knowledge in Urban Agriculture (UA) with citizens to help them to implement, maintain and improve their farming projects at home, even at work or for a school project. The proposed themes are cropping veggies in small urban spaces, small-scale breeding and composting. Then, online members can share their own projects, ideas and discuss with the community through forum. They can even write articles to share knowledge from experiences. Our initiative allows sharing and learning UA practices while avoiding physical contact and ensuring food system resilience in case of disasters.

Background Information

This year, within the new Mayor's five-year program entitled “Veliranon'Iarivo”, one main goal is to make Antananarivo a Green City. To achieve this, plans are to increase, create and maintain the new green spaces, support public space's management, apply preservation and conservation of green spaces policy, and promote Urban Agriculture by increasing the number of urban vegetables gardens and promoting climate resilient agriculture. So,

间保护政策，通过增加城市蔬菜园的数量及促进适应气候变化的农业，从而推动城市农业的发展。因此，“我的农场”应用程序是实现计划、让城市环境变得更绿色环保的重要工具。

起源

该项目正在努力解决塔那那利佛当前面临的多重挑战。首先，我们面临着废物管理的问题，大量的有机和无机废料在城市中随处可见，并难以处理。其次，当前城市缺乏足够的绿色空间应对空气污染。与此同时，我们还收到市民的请求，帮助提高他们对城市农业的认识。

通过“我的农场”应用程序，我们希望以“立竿见影”的方式改变人们对塔那那利佛粮食系统的思维理念。政府部门希望其市民明白，小型个人项目往往可以带来巨大的成就，比如粮食系统的更强韧性。新冠疫情增加了提高开放绿地质量、将自然融入城市、生产健康食品以及创造更健康环境的必要性，这是保障公民健康的关键。政府部门和当地居民需要共同携手，提高团队精神、分享意识和协作能力，以提高城市的生活质量。

该项目呼吁将新兴技术与城市农业知识结合起来，让更多市民受益。“我的农场”应用程序的创建，促进了政府部门和居民之间关于农业、养殖、废物管理、食品保存和加工的信息交流。我们还推出了个人项目分布图，并特别鼓励社区成员参加各种论坛、网络研讨会和慕课，分享各自的项目，甚至可以撰写文章，从而提高线上参与率。

首先，该项目在塔那那利佛市政府与弗里德里希·艾伯特基金会（Friedrich Ebert Madagascar Foundation）之间建立了公私合作伙伴关系。该基金会是一个私人非营利性机构，为项目提供资金支持。其次，“通过‘我的农场’应用程序分享和学习城市农业实践”战略计划也建立了公共 - 社区伙伴关系，因为政府机构以及

“Mamboly Aho” is one tool to reach that last point and make greener the city environment.

Origins

The initiative is trying to resolve multiple challenges in Antananarivo. First of all, the city is facing the waste management problem, the amount of organic and non-organic waste is quite difficult to treat and all over the place in the city. Then, the city is lacking green spots to cope with air pollution. The city also got request from citizens to improve their knowledge about Urban Agriculture (UA).

Through the “Mamboly Aho” app, the city expects to change the mindset about the food system in Antananarivo with a “quick-win” approach. The Municipality wants its inhabitants to understand that individual small projects lead to great achievement such as a better food system resilience. The COVID19 crisis has reinforced the need to improve the quality of open green spaces, integrate nature into the city, produce healthy food and a healthier environment are keys for healthy citizens. Municipality and inhabitants need to work together with team spirit, sense of sharing and actions for improved quality of life in the city.

The initiative calls on a combination of new technologies (IT) and Urban Agriculture knowledge to reach more citizens. The creation of “Mamboly Aho”, a mobile app, is facilitating information exchange about agriculture, breeding, waste management, food preservation and processing between the Municipality and its inhabitants. We also propose maps of individual projects and particularly encourage online community involvement by participating in forums, webinars and MOOCS, sharing projects and even writing content for an article.

The initiative involves firstly a public-private partnership between the Municipality of Antananarivo and the Friedrich Ebert Madagascar Foundation. It's a private non-profit institution which finances the initiative. Then, ‘Share and learn about Urban Agriculture practices through “Mamboly Aho”’ also involves a public-community partnership, as the content of Urban Agriculture practices in the application are provided by Municipality agents and experiences from the members of the community.

To implement the initiative, the funding was provided by Friedrich Ebert Madagascar Foundation. The funds are mainly used for the purchase of materials, for the development of “Mamboly Aho” and to pay additional

社区成员们的实践经验是该应用中城市农业实践内容的主要来源。

为了该项目的顺利实施，弗里德里希·艾伯特基金会提供了大量的资金支持。这些资金主要用于购买材料，开发“我的农场”应用程序，以及支付开发人员和网页设计师的额外相关费用。塔那那利佛市政府负责创造内容、监督工作、管理维护以及更新应用程序。农学专家和计算机科学家担任工作人员，由政府部门直接支付工资。

创新

通过“我的农场”应用程序分享和学习城市农业，是塔那那利佛的一项革命性战略计划。塔那那利佛是马达加斯加第一个提出这项新技术战略计划的城市。该项目实现了政府部门和当地居民之间快速、可靠地共享关于城市农业、养殖和废物处理等城市农业的信息。该项目还推出了个人项目分布图，促进城市农业项目进程的可视化。我们的目标是创建一个积极的城市农民社区，动员居民们在家里种植粮食，助力城市创建一个有韧性的粮食系统，以应对各种各样的自然灾害（飓风、洪水、干旱、疫情等）。

塔那那利佛市政府希望向更多的居民推广城市农业。为了实现这一目标，工作人员想到了将城市农业与新兴技术相结合。于是，我们首创了“我的农场”移动应用程序。虽然有了想法，但缺乏资金来实现。幸运的是，在寻找融资合作伙伴的过程中，弗里德里希·艾伯特基金会对该项目非常感兴趣，并决定提供资金支持。正是因为我们建立了良好的合作关系，该应用程序得以进入开发阶段。

成效

我们希望通过“我的农场”应用程序，分享和学习城市农业实践，最终提高居民的生活质量。我们致力于提高经济和生活环境的可持续性发展，以及在自然灾害和新冠

developers and web designers. The Municipality of Antananarivo is in charge of creating the content, supervising the work, managing maintenance and application updates. The staff is composed of agronomy experts and science computer agents, who are directly paid by the Municipality.

Innovative aspects

“Sharing and learning about Urban Agriculture” through “Mamboly Aho” is revolutionary in Antananarivo. Antananarivo is the first city in Madagascar to propose this initiative that involves new technology. It allows fast and reliable UA information sharing between the Municipality and its inhabitants about urban agriculture, breeding, and waste management. It also shows maps to locate the individual projects that facilitate visualization of UA progress. The city aims to create an active community of urban farmers involved in the dynamic of creating a resilient food system to disasters (cyclone, flood, drought, pandemic, etc.) by growing their own food at home.

The Municipality of Antananarivo wants to promote UA to even more inhabitants. To achieve this goal, the staff thought of associating UA and new technology. So, we came out with the initiative of the mobile application “Mamboly Aho”. The idea was there but the city lacked funding to realise it. Fortunately, Friedrich Ebert Madagascar Foundation was interested in the project and decided to fund it. Thanks to this partnership, the mobile application is in development phase.

Desired change or outcome

The outcome of an improved quality of life is what we're hoping to achieve with the initiative to share and learn about UA practices through “Mamboly Aho”. Antananarivo looks for economic and environmental sustainability, food system resilience in case of natural and other disasters such as the COVID-19 pandemic, better nutrition for inhabitants, better food traceability, better waste management, improved health and well-being. The change is primarily local, the intervention area is within the boundaries of the Municipality of Antananarivo.

To assess the change, the indicators needed are the number of app downloads, the number of members, the number of identified projects (vegetable gardens, hives, chicken coops, etc.), the variety of dishes consumed by members, the waste volume and the quantity of recycled items used. Municipality agents and members of “Mamboly Aho” are collecting the

肺炎疫情等其他灾害发生时，提高粮食系统的韧性。与此同时，改善居民的营养状况，加强食品来源的可追溯性，提升废物管理能力，增进人们的健康和福祉。该项目主要带来本地的改变，影响范围是塔那那利佛市以内。

为评估该项目的成效，需要衡量的指标包括：应用程序的下载量、会员人数、通过审核的项目数量（菜园、蜂箱、鸡舍等）、会员消费的菜品种类、废弃总量和回收物品的数量。政府人员和“我的农场”会员们正在收集可追踪的项目进展。

实际上，“我的农场”应用程序是采用新技术所取得的成果。这款移动应用程序是为提高获得预期结果机会而开发的特定工具。通过这款应用程序，居民之间能更轻松快捷地分享和学习城市农业实践，而无需在线下将人们聚集在一起。在尊重社交距离的同时，还能实现政府与社区以及各社区之间随时共享信息。网络群体的大力参与对我们来说是一项宝贵的资源财富，特别是在新冠肺炎疫情暴发后。

政府团队是由热爱农业和计算机科学的年轻人组成。我们正在合作开发这款移动应用程序，以在城市中推广城市农业。

“我的农场”应用程序推出后，我们将邀请塔那那利佛的全体居民加入这个在线社区。然后，会员可以通过分享个人的城市农业项目、撰写城市农业的相关文章、参加论坛等方式参与到社区活动中来。利益相关者们从而可以共同促进塔那那利佛的城市农业实践。

创新项目主要集中在塔那那利佛城市的边界地带。目标受众是当地居民（包括学生、工人、企业总裁以及退休人员等）和各种实体机构（协会、非政府组织、公司、学校等），人们拥有可上网的手机或平板电脑即可使用该应用程序。

目前，“我的农场”应用程序仍处于开发阶段。推出后，预计在未来3年内将惠及15万人。受益人包括塔那那利佛的

data and the city will be able to follow the progress of the initiative.

“Mamboly Aho” is actually the result of using new technology. It is a mobile application, a specific tool developed to improve the chances to attain the desired outcome. Sharing and learning about Urban Agriculture (UA) practices are now easier and faster with this application. There's no need to gather people in one physical place anymore. Respecting social distances but still, sharing information between Municipality-community and community-community will be possible at any time. The significant involvement of the online community is a strong asset for the city, especially after the COVID-19 crisis.

The Municipality team is composed of young and passionate people about agriculture and computer science. Together, we are developing this mobile application to promote UA in the city. As soon as “Mamboly Aho” will be launched, inhabitants of Antananarivo will be invited to join the online community. Then, members will participate in the animation of the community by sharing personal UA project, writing UA article and joining the forum. So, stakeholders will work together to improve the UA practices in Antananarivo.

The innovation is focused on the boundaries of the Municipality of Antananarivo. The city targets its inhabitants (students, workers, CEOs, retirees, etc.) and also various entities (associations, NGOs, companies, schools, etc.) in possession of a cell phone and/or tablet with internet access.

For now, “Mamboly Aho” is still in development phase. But once it's launched, it expects to reach 150 000 beneficiaries within the next 3 years. Beneficiaries are inhabitants of the Municipality of Antananarivo of any gender, any nationality (Malagasy and foreigner) and any age as long as they can read.

Measures to sustain innovation

To keep the initiative active, Municipality staff will maintain and update “Mamboly Aho”, and members will contribute by sharing information and creating content. The app development will continue evolving, open to new forms of partnerships in order to improve the service and help to reach more citizens in the future.

Learning aspects

This initiative is inspirational for other cities to promote UA. T h e y

所有识字居民，不限性别、国籍（包括马达加斯加人和外国人）和年龄。

保持创新的措施

为了保证项目的活跃性，政府人员将对“我的农场”应用程序进行维护和更新，会员们也将通过共享信息和输出内容贡献力量。该应用程序还将继续升级，开放新的合作形式，以优化服务，在未来吸收更多的民众参与。

经验

我们希望城市农业项目能够为其他城市带来启发。他们可以开发出类似的移动应用程序，以在其社区中实现城市农业信息共享。我们的项目证明了，将新兴技术和城市农业结合起来，可为城市提供更好的生活方式。我们同样赋予了年轻人一定的责任，让他们能够为塔那那利佛的可持续发展做出贡献。

“我的农场”应用程序为我们提供了许多机会，比如将自然融入城市，把人们与食物联系起来，因为该项目提倡受益者在家中生产食物，在城市弱势群体之间交换物品，并通过减轻污染、处理城市垃圾等来改善城市环境。

我们已做好准备开展网络研讨会，与世界各地的城市分享该项目的经验。此外，我们正在与其他市政当局进行协商，考虑扩大该项目在马达加斯加的影响范围，以便在现有范围外促进城市农业。

二、监测当地粮食系统（实施米兰城市粮食政策公约指标监测框架）

摘要

为优化塔那那利佛的食物政策制定流程，应对市内居高不下的营养失调比例，联合国粮食农业组织选中塔那那利佛推行《米兰城市粮食政策公约（MUFPP）》监测框架。《米兰城市粮食政策公约》监测框架是现有全球首款衡量城市粮食政策

can replicate something like this mobile application to share information about UA along their communities. Combining new technology and UA to provide a better lifestyle to cities is possible, and that's what the initiative has proven. The initiative is also giving youth responsibilities to contribute for a sustainable development in Antananarivo.

“Mamboly Aho” gives many opportunities such as bringing nature into the city, connecting people to what they eat because beneficiaries could produce their own food at home, exchange goods between vulnerable citizens, improving the environment by mitigating pollution and treat urban waste.

Antananarivo is also going to hold webinar to share our learning from this initiative with worldwide cities. In addition, the city thinks of expanding the area of intervention in Madagascar by consulting other urban municipalities to promote UA beyond our borders.

Monitoring the Local Food System (Implementing the MUFPP Monitoring Framework of Indicators)

Abstract

In order to improve the Antananarivo Food policy-making process, to tackle the high rate of malnutrition within the city boundaries, the Municipality of Antananarivo was selected by the Food and Agriculture Organization to implement the Milan Urban Food Policy Pact (MUFPP) monitoring framework. The MUFPP monitoring framework is the first global existing monitoring tool to measure a city's performance on Food Policy making processes. It was launched in 2018 as an opportunity for cities to develop a better understanding of how to work with the MUFPP indicators and establish their own Food policy indicator framework. This exercise has mainly improved the access to data on the local food system based on a selection of 6 MUFPP indicators and 25 local food-policy indicators. The use of MUFPP Indicator framework established a participatory analyses and creation of a common vision for the future.

Background Information

In 2017, the Municipality of Antananarivo signed the Milan Urban Food Policy Pact. It's the most relevant document concerning food-policy making, included within the UN-FAO framework for the Urban Food Agenda and

制定流程的监测工具。该项目于 2018 年正式启动，为各城市提供了良好的机会，帮助他们更好地理解如何利用《米兰城市粮食政策公约》指标，以建立其粮食政策指标框架。该项目主要是在选定的 6 个《米兰城市粮食政策公约》指标以及 25 个当地粮食政策指标的基础上，优化获取地方粮食系统数据的能力。《米兰城市粮食政策公约》指标框架的使用为人们建立了参与性分析及对未来的共同愿景。

背景

2017 年，塔那那利佛市政府签署了《米兰城市粮食政策公约》。这一公约是粮食政策制定领域相关度最高的一份文件，被列入联合国粮农组织（UN-FAO）的城市粮食议程及联合国人居三大会议程。政府部门专门整合了“《米兰城市粮食政策公约》指标框架”，旨在为粮食政策制定流程建立一个数据基准。与此同时，该市也是宜可城 - 地方可持续发展协会（ICLEI）“城市食品网络”的成员，通过网络研讨会、电子学习经验以及数据共享等形式积极参与国际网络。

起源

在应对营养失调的问题中，各个部门的工作人员之间缺乏协同能力，这鼓励塔那那利佛市发挥带头作用，协调各项行动。为了提高工作效率和成效，所有政策必须涵盖多个部门，以便让多个利益攸关方统一分享粮食系统的数据。然而，当前的体制存在巨大的数据缺口和不可靠的数据基础。通过使用这些指标，城市有机会了解其主要的利益相关者，并选择出相关性更高且更实用的监测指标。

该项目根据各项指标改善数据的获取途径，以全面了解粮食系统的情况，并促进对地方粮食政策活动绩效进行评估。激活和巩固多个利益攸关方参与的途径，让不同领域的行动者包括在内：提高城市韧性、改善废物管理模式、启动粮食安全倡

the UN-HABITAT III Agenda. The Municipality has integrated the “MUFPP indicator framework”, addressed to set up a data baseline for the food policy building process. The municipality is also a member of ICLEI “CITYFOOD Network” participating actively in the international network, through webinars, e-learning experiences and sharing data.

Origins

The lack of synergies between multi-sectorial actors in the fight against malnutrition has encouraged the city to take the lead to coordinate actions. In order to be efficient and effective, policies need to be cross-sectors to reunite multi-stakeholder data-sharing on food systems. Unfortunately, there are huge data gaps and unreliable data basis. Through the use of indicators, the city had the chance to meet its main stakeholders and select which indicators were more relevant and useful for the monitoring.

Improving access to data based on the indicators helps get an overview of the food system situation and facilitate the assessment on the performance of local food policy activities. Activate and consolidate a multi-stakeholder approach involving actors in the different related areas: boost the urban resilience, improve waste management, launch food-security initiatives, improve markets, etc. Strengthening a territorial approach by using data as a dialogue facilitator between current projects within the urban and regional government.

The MUFPP Indicator Framework has helped to organize City's priorities and rapidly select the accurate information. The MUFPP is for the moment the only global food policy guideline, recognized internationally by cities. This also provided consistency to the analyses, which helped to ensure partners about the importance of such an effort and supported the project's credibility. It is a solid baseline for discussions with institutions and development actors.

This Pilot project was possible with the full support of FAO HQ, RUAF Foundation, and Wilfrid Laurier University. A consultant from RUAF Foundation and FAO HQ was the leading partner of the Municipality in terms of technical support and training. The Laurier University conveyed the financial support of the project. The project was an opportunity for all stakeholders to engage in a mutual exchange in terms of expertise and good practices.

议、优化市场等。利用数据促进城市政府和地方政府已有项目之间的沟通交流，优化各地区的做法。

《米兰城市粮食政策公约》指标框架有助于整合城市的优先事项，并迅速选择准确的信息。《米兰城市粮食政策公约》是目前唯一的全球食品政策指南，得到国际上各大城市的认可。公约还使不同地区的分析具有一致性，有助于确保合作伙伴认识到该行动的重要性，并提升项目的可信度。这是与各机构及发展促进者进行讨论的坚实基础。

政府

在联合国粮农组织总部（FAO HQ）、国际都市农业基金会（RUAF Foundation）以及劳里埃大学（Wilfrid Laurier University）的全力支持下，该试点项目有序进行。一名来自国际都市农业基金会和粮农组织总部的顾问是政府部门在技术支持和培训方面的主要合作伙伴。劳里埃大学为该项目提供了财政支持。该项目为所有利益攸关方提供了机会，让他们在专业知识和实践方面进行交流。

创新

众所周知，食物是城市未来可持续发展的驱动力。《米兰城市粮食政策公约》的签署为许多机会打开了大门。因此，该监测框架是塔那那利佛监测和评估其优先事项的最佳机会。该项目具有革命性意义，因为世界上实施该项目的城市寥寥无几。塔那那利佛的成功经验可以激励该地区的其他城市施行该框架体系。塔那那利佛从44项《米兰城市粮食政策公约》指标（根据3个选择标准）中选择了其中6项，用于修订该市与食物相关的优先事项。

数据评估所面临的重要挑战包括数据缺口和数据共享。由于数据库过时，主要通过当地利益攸关方提供的外部数据填补这一缺口。实际上，这些合作伙伴非常愿意与政府部门分享和合作。为解决数据

Innovative aspects

Food is considered to be the future driver for sustainable development in cities in the future. The signing of Milan Pact was an open door for multiple opportunities. Thus, the Monitoring Framework was opportune for Antananarivo to monitor and evaluate its priorities. The project is revolutionary due to the fact that very few cities in the world have been implementing it. The Antananarivo experience can encourage other cities in the region to implement the framework. Antananarivo has selected 6 from the 44 MUFPP indicators (3 criteria of selections) to be used to revise the City's priorities related to Food.

The main challenges in the data assessment concerned basically data gaps and data sharing. Due to the outdated database, the gaps were filled through external data sources from local stakeholders. In fact, these partners were very eager to share and collaborate with the Municipality. In order to solve the challenging perpetuation of data, it was agreed to form a Cross-sector Multi-Stakeholders Committee on food policy within the City.

Desired change or outcome

One of the major outcomes of the project is the data basis from multi-stakeholders. In fact, the 6 indicators enabled the Municipality to use some sub-indicators to account for its actions and priorities. Also, it created synergies between actors in the field of food systems. The collected data enable the CUA to improve its performance. Also, the synergy of stakeholders will likely facilitate the establishment of a Food Policy Committee (or Food Board) for the City of Antananarivo.

Basically, 6 out of 44 indicators were based on 3 criteria: Evaluation criteria, Sustainability criteria, Resource availability criteria. Each were based on the 6 streams and assessed in a SWOT matrix, which allowed identifying the main advantages for the city. Key external stakeholders were associated to each indicator to collaborate with the data collection and assist the local team as technical advisors during the assessment process. This would help to reinforce the links between the city and its partners.

a) Evaluation: Power of the indicator to collect results about what is actually happening in the city as an enabler to think how such existing situation could be improved.

b) Sustainability: (accountability checks) produce and preserve data availability within the city.

永续保存这一挑战，各方同意在城市内成立一个有关粮食政策的跨部门多方利益相关者委员会。

成效

项目的主要成果之一是多方利益相关者的数据基础。事实上，这 6 项指标使政府部门能够利用一些分指标来说明其活动举措和优先事项。此外，其还创造了粮食系统参与者之间的协同效应。项目收集到的数据有助于塔那那利佛市政府（CUA）提高执行能力。与此同时，利益相关者的协同作用还能促进塔那那利佛粮食政策委员会（或粮食理事会）的建立。

大体上讲，从 44 项指标中选出的 6 项指标主要是基于 3 个标准：评估标准、可持续性标准以及资源可用性标准。每一项指标都会被放到 SWOT 矩阵中从 6 个不同的方面进行评估，有助于城市识别出其核心优势。关键的外部利益相关者与每项指标联系在一起，共同开展数据收集，并在评估过程中作为技术顾问协助地方团队。这将有助于加强城市与其合作伙伴之间的联系。

（1）评估：该指标能收集和了解这座城市实际发生的事情，使人们能够思考如何改善现有的情况。

（2）可持续性：（责任制检查）生成和保存城市内可用的数据。

（3）资源：关于提供现有或可用数据——（低成本的方法）——发挥能力，促进伙伴关系，保证未来行动的资金来源，以确保行动的连续性。

基于《米兰城市粮食政策公约》的 6 项指标，利益相关者根据其专业领域参与数据收集和分析：

- 确保采取有效行动（治理）的有利环境：政府部门公务人员；
- 可持续饮食和营养：地区营养办公室及当地的非政府组织；
- 社会和经济权益：塔那那利佛学区教育部及世界粮食计划署；



c) Resources: relevance to provide existing / available data - (Low-cost approach) - Leverage capacity to boost partnerships and ensure fund-raising for future actions to provide continuity to actions

Based on the 6 streams of MUFPP, stakeholders took part in the data collection and analysis based on their expertise:

- Ensuring an enabling environment for effective action (governance): civil servants within the Municipality
- Sustainable Diets and Nutrition: Regional Office of Nutrition (ORN) and local NGO's
- Social and Economic Equity: CISCO Antananarivo and the World Food Program (WFP)
- Food Production: Research institutes and University
- Food Supply and Distribution: Farmers' associations and NGO's, Private sector
- Food Waste: Local waste management institution (SAMVA)

This initiative focuses on food systems within the city boundaries of Antananarivo. Basically, this project is focusing on activities and strategies related to improve the local food policy and Antananarivo's food system which involves more than 2.5 million inhabitants. Also, most of the stakeholders are working on food as a way to fight against the high chronic malnutrition rate in the city.

Measures to sustain innovation

A workshop was jointly organised by the Municipality and NGO Action Against Hunger (AAH) in order to present the result and to get a big picture of initiatives that had been led as regards food issues. It was the first step to

- 粮食生产：研究机构和大学；
- 食物供应及分配：农民协会、非政府组织和私营部门；
- 食物垃圾：地方废物管理机构。

该项目关注塔那那利佛市内的粮食系统。大致来看，该项目聚焦于改善地方粮食政策的活动和策略，以及涉及 250 多万居民的塔那那利佛粮食系统。此外，大多数利益相关者正致力于解决粮食问题，以应对该市长期营养不良率居高不下的问题。

保持创新的措施

政府当局和非政府组织反饥饿行动（Action Against Hunger）联合组织了一个研讨会，展示了项目结果，并全面了解在粮食问题方面的项目计划。这是建立地方粮食政策委员会的第一步。

经验

建立指标监测框架为政府部门提供了一个独一无二的机会，使其能够深入了解塔那那利佛粮食政策的制定流程，与其他城市和专家的交流也日益丰富。塔那那利佛与其他城市建立伙伴关系，有助于在大体上促进《米兰城市粮食政策公约》的区域性协调，同时有助于实施城市监测框架。这将促进经验分享、城市交流和能力建设。《米兰城市粮食政策公约》的 44 项指标旨在反映联合国可持续发展目标，适用于对粮食政策监测感兴趣的都市。塔那那利佛希望与其他城市共享成功的实战经验。

三、改善儿童的食物：学校菜园为儿童提供优质营养

摘要

目前，塔那那利佛市政府管理着 94 所公立小学。每年约有 56,000 名儿童入学，且大多来自贫困家庭。“改善儿童的食物”是政府当局的一个项目，包括

the creation of a Local Food Policy Committee.

Learning aspects

Working on the Indicator's Monitoring Framework has provided a unique opportunity for the Municipality to immerse into the process of the definition of a Food Policy for Antananarivo. The exchange with other cities and experts were enriching. Partnerships with other cities help create a regional coordination for the MUFPP in general but also for the implementation of the Monitoring Framework in cities. Such coordination will enhance experience sharing, city exchanges and capacity building. The MUFPP 44 indicators were designed to reflect the UN SDGs and are adaptable for cities that are interested to monitor their food policies. Antananarivo expects to share with other cities the successful acknowledged experience.

Better Food for Kids: Vegetable Gardens in Schoolyards to Contribute to Better Nutrition for Children

Abstract

Currently, the municipality of Antananarivo manages under its tutelage 94 Public Primary Schools. Each year, around 56,000 children are enrolled, however the majority come from vulnerable families. Better food for Kids is an initiative of the municipality which consists of installing vegetable gardens in these schools in order to fight against malnutrition among school children by offering them a balanced meal while offering a program of community production, environmental education, and thus avoid dropping out of school. The project will be carried out in 2 steps: A step of setting up and subsidizing school vegetable gardens, through the AULNA (Urban Agriculture Low Space and No Space) program and a step of empowerment of the project through plant nurseries and the participation of local populations. During this phase, finishing works and equipping the gardens on each site will be provided in order to make it functional.

Background Information

For two years, the municipality of Antananarivo signed the Pact of Milan through which it took out the framework of indicators of the pact of urban food policies specific to Antananarivo. The municipality is also a member of ICLEI. Since the beginning of 2020, the food program in schools

在公立学校兴建菜园，为学生提供均衡膳食，解决儿童营养不良的问题；同时提供社区生产项目，开展环境教育，从而避免学生辍学。该项目将分为两个步骤进行：第一步，通过城市农业低空间与无空间（AULNA）计划，在校园内开辟菜地并提供资金支持；第二步，通过建立植物苗圃和当地居民的积极参与，为该项目赋能。在这一阶段，该项目将帮助每个校园的菜地进行装修和配备设施，从而保证各菜地可以运作。

背景

距签署《米兰城市粮食政策公约》已过去两年，从该公约中选取出了专门适用于塔那那利佛的粮食政策指标框架。塔那那利佛也是宜可城 - 地方可持续发展协会的成员。自 2020 年初以来，学校食堂为学生提供食物的项目已被纳入新市长的“Veliranon 'Iarivo”的五年计划，该计划的第一个要点是关注“人民的福祉”。

起源

塔那那利佛的公立小学每年大约招收 5 万名适龄儿童。但问题是，由于大多儿童营养不良，每年的辍学率和失学率都特别高。该项目通过在校内种植蔬菜，为学校食堂提供均衡膳食，同时向受益人提供真正的农业知识，以提升学校的教育服务水平，提高儿童教育成功率。

我们希望改变教育的本质。政府部门的目标是在其六个行政区内提高受教育和识字儿童（即能读、写的儿童）的比例，提高学校的升学率，从而进一步提升受益者及其身边人士的总体生活水平，从他们的父母开始。为孩子提供更好的营养，他们能更好地在学校中受益。

为提高该项目的可行性，并尽可能将这一理念传递给更多的学校，我们将利用城市农业低空间与无空间的方法，回收利用废弃的物品和材料（如使用过的鼓、管道等），并将其用于培养农作物。首先，

through school canteens has been part of the new mayor's five-year program entitled "Veliranon 'Iarivo", the first point of which concerns "Well-being of the population".

Origins

Every year, the municipality welcomes around of 50,000 children in the Public Primary School. The problem is that each year the dropout and failure rate is quite high due to child malnutrition. The project aims to motivate schooling and the success rate of children through vegetable gardens in schoolyards in order to supply school canteens with balanced meals but also to provide real agricultural learning to beneficiaries.

The desired change is about an educational nature, the municipality's ambition is to increase the rate of educated and literate young children (that is to say who can read and write) within its six boroughs which will increase the school success rate and thus improve the standard of living in general for beneficiaries and even those around them, starting with their parents. Better nourished children are children who would more go to school.

In order to make this project viable and to provide it to many schools as possible, we will use the method called AULNA (Agriculture Urban Low Space No Space) which uses recycled objects and materials (example: used drums, piping, etc.), in order to turn them into agricultural areas. First, we will initiate the children and then involve their parents and their communities to maintain the cultivated spaces so that they can practice in their locality.

Our initiative involves both a public-private and a public-community partnership. We have already started a public-private partnership with a company in the capital which will finance six showcase sites in public primary schools. The system we've put in place is that this company finances the works, the municipality helps for the technical side and the establishment of the public-community partnership. By this way, the company could fulfill its social and environmental responsibility by involving the public sector.

The city plans to involve other companies in this initiative. The funds raised will be used mainly for the purchase of the materials necessary for the establishment of vegetable gardens and a small part for the communication of actions realised. Human resources will be the municipal staff who will be dedicated to this initiative (social worker, agricultural engineer, gardener, etc.). This staff will be paid directly by the municipality. The management of the sites will therefore be ensured by the municipality.

我们会激励孩子们参与进来，然后让他们的父母及其社区共同维护耕种空间，让他们在各自不同的地区开展实践。

政府

我们的项目需要公共事业单位与私营部门及各个社区共同合作。目前，我们与首都的一家公司建立了公私合作关系，该公司将为公立小学的六个示范点提供资金支持。我们所建立的框架体系是，该公司为项目提供资金支持，政府部门提供技术帮助，并建立公共 - 社区伙伴关系。通过这种方式，企业可以参与公共部门的项目，履行其社会责任和环境责任。

我们计划让其他公司也参与进来。项目筹集到的资金将主要用于购买建立菜园所需的材料，一小部分用于宣传项目所取得的成效。政府部门的工作人员还为该项目提供人力资源（社会工作者、农业工程师、园丁等）支持。这些工作人员的工资将由政府部门直接发放。因此，这些新建的菜园也将由政府部门统一管理。

创新

“改善儿童的食物”是一项具有渐进性的项目，旨在为拥挤、脆弱的城市地区提供食物，为我们将都市农业与粮食生产中的废物管理相结合提供了可能。该项目提倡废物回收和循环利用。我们可利用有机废料制造堆肥，给作物施肥。利用旧的材料（米袋、木托盘等）作为农作物的容器进行废物回收利用。利用校园内狭小的空间进行耕种，改善学生的营养状况。实际上，短周期的农业活动有助于为食堂提供新鲜和营养的食材。

我们也发现了项目中存在的一些阻碍，其中之一是组织内部的干扰，可以通过重组团队顺利地解决。即使塔那那利佛市政府拥有充足的技术和人力资源，但缺乏资金支持也是一大障碍。因此，我们决定寻找资金合作伙伴，并最终建立了公私



Innovative aspects

“Better Food for Kids” is evolutionary, it's an initiative that helps provide food in vulnerable urban areas which is often low in space. Combining urban agriculture and waste management in food production is possible. The initiative calls on waste recovery and recycling. From organic waste, we are going to make compost which will fertilise the crops. For the waste recycling, used materials (rice bag, wooden pallet, etc.) are adapted as farming container. Using little space in the schoolyard for gardening is beneficial for students' nutrition. Indeed, short cycle agriculture contribute to provide fresh and nutritious food for canteens.

Some obstacles to the initiative have been observed, one of them is a disturbance in the organization that has been easily resolved by reorganizing the team. Even if the Municipality of Antananarivo has the technical and the human resources required, the lack of funding was also an obstacle to the initiative. So, we decided to look for financial partners and ended up with a public-private partnership that can support six Public Primary Schools for now. Step by step, we are hoping to find more partnership to reach the goal of 94 schools.

Desired change or outcome

The outcome we hope to achieve with Better Food for Kids is an improved quality of life with economic and environmental sustainability, social integration of vulnerable community, including participation in the waste management of the city, better nutrition for primary school students, decrease in school dropout rate, agricultural education for children, health and

合作伙伴关系，目前可为六所公立小学提供支持。我们希望逐步找到更多的合作伙伴，最终为 94 所学校提供帮助。

成效

我们希望通过“改善儿童的食物”项目，提高生活质量，实现经济和环境可持续性，让弱势群体能够更好地融入社会，包括参与城市的废物管理、改善小学生的营养状况、降低辍学率、为学生提供农业教育、为弱势社区开展健康、福利和创收活动。该项目主要带来本地的改变，影响范围是塔那那利佛市以内。

评估这一变化所需的指标包括受益人数量、学校辍学率、学校升学率、粮食丰收量、食堂供应的均衡膳食的数量、废弃物数量以及回收再利用的物品数量。这些测量要由政府机构、教师和小学生家长负责进行。然后，政府工作人员对收集到的数据将统一进行整理分析，以了解该项目的进展情况。

为达到预期的结果，我们采用了涉及农业、教育、废物管理、营养和卫生的综合性办法。我们还充分利用了新兴技术，创建了一款移动应用程序，帮助政府当局和社区之间学习和分享城市农业的相关知识。为了宣传该项目，塔那那利佛市政府编写了一份指南，促进包括小学生家长在内的社区参与，最终实现项目目标。

塔那那利佛市政府负责为学生和工作人员提供农业培训，并提供学校菜园的建设材料。在小学生参与农业活动的同时，政府机构还安排负责人指导实践。此外，政府机构不仅为小学生提供培训，还会对他们所在的社区进行培训。通过这种方式，所有的利益相关者都得到了培训，并保证了蔬菜园的可持续性。

“改善儿童的食物”项目主要聚焦低收入的弱势群体，关注难以为上学的孩子提供充足且高质量食物的家庭。

2016 年，该项目让 16,096 名市民直接受惠。今年，其为 6,000 名在校儿童提



well-being and income-generating activities for vulnerable community. The change is primarily local, our area of intervention is within the boundaries of the Urban Commune of Antananarivo.

The indicators needed to assess the change are the number of beneficiaries, the school drop-out rate, the school success rate, the harvest quantity, the number of balanced dishes served in the canteen, the waste volume, and the quantity of recycled items used. The measurements are done by municipality agents, teaching staff and parents of primary school students. Then, the collected data will be analysed by municipality staff to see the progress of the initiative.

To attain the desired outcome, we use an integrated approach involving agriculture, education, waste management, nutrition and health. The use of new technology such as the creation of a mobile application that will help learning and sharing information about urban agriculture between municipality and community is also developed. For this initiative, the Municipality of Antananarivo has created guidebooks for its diffusion and the involvement of community including primary school students' parents are also tool and method to make the change.

The Municipality of Antananarivo is in charge of students and staff for agricultural training, and is also providing the implementation materials for the vegetable gardens in the schoolyards. The municipality agents are there to guide the implementation while the primary school students are participating. In addition, municipal agents are not only going to train primary school students but also the community they're living with. By this way, all stakeholders are trained and the sustainability of the vegetable gardens assured.

“Better Food for Kids” is focused on vulnerable communities with very

供了支持。在未来两年里，我们的目标是惠及所有的小学生，总共 5 万名儿童，其中，女孩占比 60%，男孩占比 40%。此外，还会通过创收活动为一些弱势群体（单身母亲）提供帮助。

保持创新的措施

对教职员和社区进行环境和农业教育培训是必不可少的。有了政府部门提供的知识、经验和书籍，随着时间的推移，他们可以追求创新和进步。我们会定期更新移动应用程序，以确保用户可方便地获取必要的最新信息。

经验

我们的目标是通过“改善儿童的食物”项目，激励世界各地的城市参与进来。无论是发达城市还是发展中城市，都可以借鉴我们的方法处理城市垃圾。废物回收和循环利用有助于蔬菜园的建设和施肥。此外，该项目还致力于将城市未开垦的空间改造为蔬菜园，以提供当地的食物。这对任何城市来说都是一个减少食品运输成本和污染的机会。通过项目开发的移动应用程序，我们可以分享项目的信息及经验。我们还考虑组织研讨会和网络会议，与更多的社区和城市实现共享。

low income. It concerns the families who struggle to provide good quality and enough quantity of food for their schooled children.

In 2016, the initiative directly affected 16,096 beneficiaries. This year, it affects 6000 schooled children. For the next two years, it targets to reach all primary school students, a total of 50,000 children including 60% of girls and 40% of boys, and vulnerable people (single mothers) due to income-generating activities.

Measures to sustain innovation

The training of teaching staff and community on environmental and agricultural education is essential. With knowledge, experiences and books given by municipality, they can pursue the innovation over time. Easy access to necessary and new information is also assured by the mobile application which will be updated regularly.

Learning aspects

This initiative is aiming to inspire many cities around the world. Other cities can use our method to cope with urban waste either they are developed or developing cities. Waste recovery and recycling help in fertilization and implementation of the vegetable gardens. Plus, the initiative is transforming urban uncultivated spaces to gardens which provide locally produced food. This is an opportunity to any city to reduce both costs and pollution caused by food transport. Sharing information about this initiative and the learning from it will be possible from the mobile application under development. The city also thinks of organising seminars and webinar to reinforce the sharing with larger communities and cities.

项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 1: 在全世界消除一切形式的贫穷
- ◆ 目标 2: 消除饥饿, 实现粮食安全, 改善营养和促进可持续农业
- ◆ 目标 3: 让不同年龄段的所有人都过上健康的生活, 促进他们的福祉
- ◆ 目标 4: 提供包容和公平的优质教育, 让全民终身享有学习机会
- ◆ 目标 15: 保护、恢复和促进可持续利用陆地生态系统, 可持续地管理森林, 防治荒漠化, 制止和扭转土地退化, 阻止生物多样性的丧失

(2) 《新城市议程》

为所有公民提供基本生活服务
加强社会联系和支持创新、绿色倡议
增加安全、交通便利和环保的公共空间

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- Goal 1: End poverty in all its forms everywhere
- ◆ Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
 - ◆ Goal 3: Ensure healthy lives and promote well-being for all at all ages
 - ◆ Goal 4: Ensure inclusive and equitable education and promote lifelong learning opportunities for all
 - ◆ Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

(2) New Urban Agenda

Provide basic services for all citizens
Improve connectivity and support innovative and green initiatives
Promote safe, accessible and green public spaces

荷兰 布雷达
Breda, Netherlands

绿色码头——基于自然包容性码头的城市河流更新

GreenQuays - Urban River Regeneration through Nature
Inclusive Quays



城市基本信息

人口规模: 184,271
人口增长率 (%) : 0.20
面积 (平方公里) : 128.68
人口密度 (人 / 平方公里) : 1,464
人均国内生产总值 (美元) : 32,090
基尼系数: 0.29

BASIC CITY DATA

Population size: 184271
Population Growth Rate (%): 0.20
Surface Area (sq.km): 128.68
Population Density (people/sq.km): 1464
GDP Per Capita (U.S.\$): 32090
GINI Index: 0.29

摘要

布雷达正面临着不可持续的城市化、城市生态系统退化和应对气候变化缺乏抵御力的问题。为了应对这些挑战，绿色码头项目旨在通过将自然包容性绿色码头与公共绿地连接起来，作为城市恢复马克河计划的一部分，在布雷达进行可持续的城市改造。市中心地区人口密集，通常没有足够的空间发展自然码头，绿色码头将对一套复杂、可迁移的创新解决方案进行测试，用于复原这些地区的城市河流。该解决方案以创新的自然包容性码头 (NIQ) 技术为中心，专门用于支持复杂垂直生态系统的发展，为植物群和动物群提供有利的生存条件。绿色码头以系统创新为基础，整合了气候响应、空间再生、复原和经济赋能的方法。该技术方案以社会创新为支持，通过集中参与、共同设计的方式，让外部利益相关方和公民参与进来。

背景

港口重新开放后，市政决定对新马克河项目采取日光照明。这是市政策略的一部分，以改造城市、使其更适应气候变化，更具生物多样性和防止热应激，从而更适合居住。

起源

布雷达正在面临着不可持续的城市化、城市生态系统退化和应对气候变化

Abstract

Breda is struggling with unsustainable urbanisation, degradation of urban ecosystems, and lack of resilience to climate change. Addressing these challenges, GreenQuays aims at sustainable urban renaturation in Breda using nature inclusive green quays linked to public green spaces as part of a bigger scheme targeting the urban restoration of the river Mark. GreenQuays will test a complex set of transferable and innovative solutions for renaturing urban rivers in dense downtown areas, where there is insufficient space for developing natural riverbanks. The solution is centered on an innovative Nature Inclusive Quay (NIQ) technology that is specifically designed to support the development of a complex vertical ecosystem, providing favourable conditions for flora and fauna. GreenQuays also builds on systemic innovation, integrating climate-responsive, spatially regenerative, restorative and economically empowering approaches. The technical solution is supported by social innovation, through applying an intensive participatory co-design process, targeting the engagement of external stakeholders and citizens.

Background Information

Daylighting of the river Nieuwe Mark is a municipal decision following the re-opening of the harbour. It's part of the municipal strategy to renature the city and make it more more climate-change resilient and liveable with more biodiversity and prevention of heat-stress.

Origins

Breda is struggling with unsustainable urbanisation, degradation of urban ecosystems, and lack of resilience to climate change. To resolve these

缺乏抵御力等问题。为了应对这些挑战，绿色码头项目旨在将自然包容的再生方案（将自然包容绿色码头与公共绿地相连）作为城市恢复马克河计划的一部分，在布雷达进行可持续的城市改造。

绿色码头项目的目标是利用自然包容的再生方案，将绿色码头与公共绿地相连，在布雷达进行可持续的城市改造。也就是说，项目旨在为社区、动植物群和整个城市创造更好的生活环境。

项目合作方由一批横向和纵向一体化的合作伙伴组成，所有合作方对绿色码头创新解决方案的开发、测试、实施、监测、推广和最终推出都至关重要。具体包括牵头单位布雷达市政当局，负责布雷达城市发展和公共空间管理的，以及 7 个合作伙伴：两个学术机构，一个是提供材料和建筑工程专业知识的代尔夫特理工大学，另一个是提供景观建筑和气候反应设计专业知识的瓦赫宁根大学；提供动植物经验的环境协会联合会——巴罗尼自然广场协会（Natuurplein de Baronie）；提供生境管理和监测专业知识的环境保护非政府组织——荷兰爬行动物、两栖动物和鱼类保护组织（RAVON）；布拉班特中西部地区水务管理部门——布拉班特三角洲水务局；苗圃机构“范德伯克苗圃”（Boomkwekerij Van de Berk）和有着丰富的利益相关方协商经验的组织“Blast”。由此可见，项目从广泛的领域引入知识和网络，确保制定复杂、创新的解决方案。

该项目的合作关系具有创新性，因为来自不同学科的伙伴建立合作关系，以共同制定一个综合的解决方案。合作方善于尝试新事物、并能从失败的经验中学习和改进自身。其次，该项目提供了一个展示经验和知识的平台。布雷达市政当局获得了不同合作方提供的各方面知识和经验，并将其进行综合利用。

通过“城市创新行动倡议”（Urban innovation Actions Initiative），该 项

挑战，GreenQuays aims at sustainable urban renaturation in Breda using nature inclusive regenerative solutions (green quays linked to public green spaces) as part of a bigger scheme targeting the urban restoration of the river Mark.

GreenQuays initiative's goal is the realisation of sustainable urban renaturation in Breda using nature inclusive regenerative solutions - green quays linked to public green spaces - i.e., GreenQuays aims at creating a better living environment for the community, the flora and fauna and the city as a whole.

The partnership consists of a horizontally and vertically integrated set of partners, all of which are essential for the development, testing, implementation, monitoring, scaling up and roll-out of GreenQuay's innovative solutions. It consist of the lead partner, the Municipality of Breda, responsible for urban development and management of public space in Breda and 7 partners; two academic institutions, one providing expertise on materials and architectural engineering (TU Delft), the other one on landscape architecture and climate responsive design (Wageningen University); a federation of environmental associations covering experience both on flora and fauna (Natuurplein de Baronie); a conservation NGO bringing expertise on habitat management and monitoring (RAVON); the regional water authority of Mid- and West-Brabant (Waterboard Brabantse Delta); a tree nursery (Boomkwekerij Van de Berk) and an organisation experienced in stakeholder consultations (Blast). Thus, knowledge and networks are introduced from a wide variety of fields, ensuring the development of complex, innovative solutions.

This partnership is innovative because of the formation of the partnership with partners from all different diciplines that are working on a combined solution. The partners have the benefit of being able to try new things and fail and learn fromthis and improve. Next to that the project offers a platform to showcase their experience and knowledge. The municipality of Breda has the benefit of all the knowledge and experience from the different partners and the synergy that goes together with that.

The project is co-funded by the European Regional Development Fund through the Urban innovation Actions Initiative for 80%, The other 205 is financed by the partners.

目 80% 的资金由欧洲区域发展基金 (European Regional Development Fund, ERDF) 提供, 其余 20% 由合作方提供。

创新

本项目具有革命性意义: 项目团队进行一项广泛的基准分析得出结论, 在欧洲人口密集的城镇化地区, 尚未通过城市河流复原实现密集型绿化。

本项目及其创新计划尚未遭遇重大阻力。曾经有人对项目所需资金提出疑问, 但为社区解释了项目预期效益后, 大部分疑问得到了解决。

技术性创新: 绿色码头项目的技术创新包括, 结合新提出的材料方案与创新技术的实施方法 (码头的不同角度、外凸砖块、回退空间、岸栖植物平台、大型生物庇护所、特定的雨水径流路线等), 以达到最佳的复原效果。

系统性创新: 绿色码头提出的解决方案采用具有气候适应能力、空间再生能力和恢复能力的技术创新, 支持生物多样性, 为动植物提供生存空间, 并有助于减轻水压。

社会性创新: 绿色码头采用集中参与、共同设计的实施方式, 让外部利益相关方和公民参与进来。

成效

绿色码头项目的成功实施取得以下主要成果:

- 证实了此前的实验室测试结果, 从而验证小规模测试的不同组分;
- 在可操作性的环境中, 通过小规模试验开发至少 10 种新材料和技术, 用于“自然包容性码头”的实施, 以确定最佳材料、墙体布局和结构设计方案, 从而实现项目目标;
- 将自然包容性码头技术的成熟度提高到 7 级;

Innovative aspects

The initiative should be considered revolutionary: An extensive benchmarking analysis done by the consortium concluded that in densely urbanised areas intense greening through urban river renaturation has not yet been achieved in Europe.

There hasn't been any significant resistance to the initiative and its innovations. There were some questions about the money needed, but after explaining the foreseen benefits for the community that was mostly solved.

TECHNICAL INNOVATION: The technological innovation of GreenQuays project consist of newly developed material propositions combined with innovative technical implementation approach (different quay angles, protruding bricks, backspace, platform for riparian plants, shelters for macro fauna, specific rainwater runoffs, etc.) to achieve optimal renaturing results.

SYSTEMIC INNOVATION: GreenQuays' proposed solution uses the technical innovation in a climate-adaptive, spatially regenerative and restorative manner, supporting biodiversity, providing living space for flora and fauna, and contributing to water stress relief.

SOCIAL INNOVATION: The solution applied by GreenQuays builds on an intensive participatory co-design process, targeting the engagement of external stakeholders and citizens.

Desired change or outcome

Successful implementation of GreenQuays project foresees the following main results:

- Verification of laboratory test results presented as previous know-how to validate different compositions for small-scale testing,
- Developed at the small-scale pilot in operational environment at least 10 variations of new material combinations and technologies to be applied in the implementation of nature inclusive quays to determine the best material, wall layout and structural design options for achieving project objectives,
 - Increased technology readiness level to 7 for the NIQ technology,
 - Constructed a real-life pilot of a 175 meter stretch of nature inclusive quays, and redeveloping 7500 m2 urban grey infrastructure area,
 - Monitored environmental impact and performance of the NIQ

➤ 建造了一处跨越 175 米的自然包容性码头现实试点场地，并重新开发了 7500 平方米的城市灰色基础设施区；

➤ 监测自然包容性码头技术在小规模和大规模试点中的环境影响和性能，重点关注生态系统发展的先决条件；

➤ 建立城市更新利益相关方“共同设计、共同创造”持续对话机制，并成为最佳案例工具；

➤ 按照参与性原则建立公共绿色空间网络，构建连接自然和人群的最佳亲生物城市环境；

➤ 通过提供有关再生性城市更新办法的指导，建设地方当局和所有利益相关方在城市更新最优做法方面的能力；

➤ 为地方、区域和国家当局提供城市河流恢复和更新以及创新治理办法方面的政策支持；

➤ 提高利益相关方对包容性、再生性城市（再）发展重要性的认识和公众认知；

➤ 作为经过验证的案例在市域和其他地方推广；

➤ 根据联合国《新城市议程》（特别是针对可持续发展目标 11、13、14、15）、《欧盟城市议程》和《欧盟自然、民众和经济行动计划》，提出和推广以自然为本、具有城市更新恢复力的解决方案为目标的综合方案。

项目产生的影响将主要是在当地范围，但该项目的目标是激励其他城市，不仅是荷兰境内城市，还包括世界各国城市，利用这个项目中获得的知识改善他们的城市。

地方和次国家政府越来越多地要求为地区指导出资。许多主题项目要求在治理的完善过程中提供地区指导。地区指导人员建立了一个国际网络，有望成为实现最佳做法和响应众多需求的工具。

合作伙伴设计了作为可定义指标的成果指标，用于解释可衡量成果的各个具体



technology at small-scale and large-scale real-life pilot – focusing on preconditions for ecosystem development,

➤ Established a continuing co-design and co-creation dialogue for urban renewal with stakeholders serving as a best-example tool,

➤ Implemented a network of green public spaces based on participatory approach to ensure an optimum urban biophilic environment connecting nature and people,

➤ Build Capacity of local authorities and all stakeholders on best urban renewal approaches with guides on regenerative urban renewal approaches,

➤ Policy support for local, regional and national authorities on urban river restoration and renewal and innovative governance approaches,

➤ Increased awareness and public perception of stakeholders on importance of inclusive and regenerative urban (re)development,

➤ Validated case as a basis for wider replicability within the municipality and elsewhere,

➤ Promoting a holistic approach targeting nature-based solutions and resilient urban renewal supported and proposed by the New Urban Agenda of the UN (particularly addressing SDGs 11, 13, 14, 15); the Urban Agenda for the EU and the EU Action Plan for Nature, People and the Economy.

The change will be primarily local, but it will inspire other cities not only in the Netherlands, but all over the world to use the knowledge we gather in this project and use it to improve their own cities.

Local and Subnational Governments increasingly call on Territorial Coaching to which funding they contribute. Many thematic projects call on Territorial Coaching in the process of good governance. The Territorial Coaches have created an International Network which tends to become a tool

方面。提出这些指标旨在给出明确的项目成果参照，并帮助确定项目重点。跟踪成果指标的价值可判断项目是否朝着预期的方向发展，以及评估关键项目产生的影响。如果在项目执行过程中，实现预期成果存在可行性，这些指标将促使人们思考是否应该加以干预及干预是否有效。

绿色码头项目中设计的成果指标符合政策、规范（指明项目进展的正确方向），且可靠、可核查、可及时追踪。指标的制定遵循了《监测和评价指导文件》（Guidance Document on Monitoring and Evaluation）与《2015 年欧盟凝聚基金和欧洲区域发展基金概念和建议》（European Cohesion Fund & European Regional Development Fund, Concepts and Recommendations, 2015）。

该项目设定了 9 项成果指标，涵盖项目成果的技术、社会和环境方面。

自然包容性码头技术的成熟度预计将在项目结束前达到 7 级（操作环境中的系统原型演示）。社会指标一方面侧重于受新城市绿地积极影响的居民人数和居民体会到的生活条件改善程度。作为补充，也设置了一个指标用于监测公民认识的提高。另一方面，社会指标将关注能力建设 and 政策支持活动的成果。衡量项目独一无二的“共同设计、共同创造”实施过程也会被检测。该项目也通过识别和监测陆地上和水中的指标物种以及项目实施后 7 年内受复原影响的面积，评估与环境有关的结果。

该项目被划分为不同的工作包，每个合作方负责某一工作包或其中的一部分内容，并监测各自的工作进度。合作关系的完整实现有望提高实现预期结果和改变的几率。通过利用所有合作方的专业知识，为本项目面临的挑战找到新的解决方案。

由于受新冠疫情影响，我们未能实现让利益相关方密切参与设计和开发的预期。为了解决这个问题，我们组织了在线

for capitalizing on best practices and responding to many requests.

The partnership has devised the result indicators as definable variables that will provide tangible information on specific aspects of results that lend themselves to be measured. The indicators are proposed so that they provide for clear results to be achieved and help to define the project focal point. Tracking the values of result indicators will allow a judgement on whether or not the project is in the desired direction, as well as on the effects of key project outputs. If at any point during project implementation, the viability of achieving desired results is lingering, the indicators will prompt reflection on the appropriateness and effectiveness of intervention logic.

The result indicators as devised in the GreenQuays project are responsive to policy, normative (clearly stated, which direction is the right path of project progress), reliable, verifiable and can be followed-up timely. Indicators were devised in coherence with Guidance Document on Monitoring and Evaluation, European Cohesion Fund and European Regional Development Fund, Concepts and Recommendations, 2015.

The project has also set 9 result indicators, covering the technology, social and environmental aspects of the project results. The maturity of the NIQ technology is expected to reach TRL 7 (system prototype demonstration in operational environment) by the end of the project. The social indicators will focus on one hand on the number of inhabitants positively affected by new green urban areas and the perceived improvement of living conditions by inhabitants. Complementing this, an indicator will monitor the increase of awareness of citizens. On the other hand, social indicators will follow the results of capacity building and policy support activities. The unique co-design and co-creation process of the project will be monitored too. Results related to environment will be assessed by identifying and monitoring indicator species on land and in water and by the size of renatured urban areas with seven years after the project.

The project is divided in work packages and each partner is responsible for a certain work package, or part of it. They all monitor their part of the work package.

The integrity of the partnership is expected to improve the chances to attain the desired outcome and change. By combining all partners expertise, we come to new solutions for challenges we face in the project.

Due to Covid-19 we were not able to involve stakeholders as closely in the design and development as we would have wanted. To address this,

会议，供利益相关方建言献策和提问。此外，还将举办更多的线上和线下研讨会，让利益相关方参与到项目中，同时向他们宣传如何复原和改善其生活环境，从而促进城市生活条件的改善。这些利益相关方是城市的各个部门。

保持创新的措施

本项目得到了城市顾问的支持，所获得的知识将用于解决新马克河其余部分的采光问题。布雷达市政当局致力于解决不可持续的城镇化、城市生态系统退化和缺乏气候变化抵御力等问题，并将其提上工作日程。

经验

绿色码头项目的成果之一与城市创新行动（Urban Innovative Actions）的目标一致，即鼓励市政当局采用该项目开发的解决方案，如扩大和推广项目成果。该项目的重点是为项目的开发和拓展提供基础，从而释放项目的潜力，进行更大的推广。在布雷达市内，该项目将为今后实施新马克河项目奠定基础——新马克河项目旨在复原整个新马克河及其邻近地区。此外，增加地方当局以及国家、欧洲政策制定者的知识储备是确保项目成果得以推广的关键。MUA 将利用布拉班特三角洲水务局的战略输入进行协调，建立其国内和国际网络。

我们期待在完成该项目后，能得出一份行动方案，指引如何在城市中心建立自然包容性码头，以及如何为居民和动植物改善城市气候。我们非常愿意与其他面临同样问题的城市分享我们的知识。我们将公开所收集的所有知识。

we organised webinars where stakeholder could give their input and ask questions. Furthermore, there will be more online and offline workshops to engage stakeholders to contribute to the project and to inform them on how they can renature and improve their own living environment and thus contribute to the improve the living conditions in the cities. The stakeholders are a cross-section of the city community.

Measures to sustain innovation

This project is supported by the city council and the knowledge obtained will be used in daylighting the rest of the River Mark. The municipality of Breda has committed to address unsustainable urbanisation, degradation of urban ecosystems, and lack of resilience to climate change and has this on the agenda.

Learning aspects

One of the results of GreenQuays project, coherent with Urban Innovative Actions' goals, is encouraging urban authorities to adopt the solutions developed within the project – i.e., rolling out and scaling up project results. The project focuses on unlocking the potential of the project for larger replication by providing a suitable base for its exploitation and upscaling. Within the city of Breda itself, this will provide a basis for future implementation of the New Mark project designed to restore the entire New Mark River with its adjacent areas. Additionally, increasing knowledge at the level of local authorities, but also among national and European policy makers is a key issue to be addressed in order to ensure potential conditions for wider integration of project results. The MUA will coordinate relying on strategic inputs from the Waterboard Brabantse Delta, building on its national and international network.

It is expected that after the city has realised this initiative, it will have a blueprint on how to build nature inclusive quays in a city center and improve the city climate for people as well as flora and fauna. The city would be more than willing to share knowledge with other cities that are facing the same problems as Breda. All the knowledge that we gather will be publicly available.



项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 11：建设包容、安全、有抵御灾害能力和可持续的城市及人类住区
- ◆ 目标 14：保护和可持续利用海洋和海洋资源以促进可持续发展
- ◆ 目标 15：保护、恢复和促进可持续利用陆地生态系统，可持续管理森林，防治荒漠化，制止和扭转土地退化，遏制生物多样性的丧失

(2) 《新城市议程》

增加安全、交通便利和环保的公共空间

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
- ◆ Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- ◆ Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

(2) New Urban Agenda

Promote safe, accessible and green public spaces

塞内加尔 圣路易斯
Saint Louis, Senegal

地方政府跨市养护红树林

**Inter-Municipal Approach for the Safeguard and
Enhancement of the Mangrove by the Local Authorities**



城市基本信息

人口规模：312,369
人口增长率（%）：3.00
面积（平方公里）：879
人口密度（人 / 平方公里）：355
人均国内生产总值（美元）：620
基尼系数：0.34
支柱产业：渔业、旅游业、农业、畜牧业、
工艺品行业

BASIC CITY DATA

Population size: 312369
Population Growth Rate (%): 3.00
Surface Area (sq.km): 879
Population Density (people/sq.km): 355
GDP Per Capita (U.S.\$): 620
GINI Index: 0.34
Main Source of Prosperity: Fishing, Tourism, Agriculture, Livestock, Crafts

摘要

由于气候变化与人为因素对圣路易斯省的自然资源（包括红树林）造成巨大压力，地方当局在当地合作伙伴的技术支持下，就保护与修复湿地自然保护区推出了一项跨市合作项目。项目驱动建立了专门机构，制定出台基于地方治理的红树林管理战略政策，将红树林与地方发展相结合。其中最值得重视的是建立了圣路易斯省协商框架，将地方当局、技术服务部门、地方私营企业、民间社会组织以及社区组织的力量联合在一起。

这项基于环境治理的跨市合作项目得到了省议会的政治支持，并由圣路易斯省区域发展局领导；同时该项目也为圣路易斯省提供了一个机会，指导并加快实施包括红树林在内的自然空间保护项目。

背景

塞内加尔《分权法案三》促进了公共政策的地域化，巩固了各地区当局之间的联系。

为此，圣路易斯省和各市政局签署了一项跨市合作协议，以有效管理领土，实现城市的环境发展。

该协议受一项圣路易斯省法令和多方利益相关者协议的约束，管理以生态系统治理为目的的地域组织，为实现可持续

Abstract

Due to the high climate and anthropogenic pressure on the natural resources of the department of Saint-Louis, including mangrove, local authorities, with the support of local technical partners, have promoted an inter-communal approach to safeguard and enhance these protected wetlands. In this dynamic, the mangrove management strategy is based on an approach of local governance and participatory local development through the establishment of specific bodies. In particular, a Departmental Consultation Framework brings together the local authorities, technical services, the local private sector, civil society organizations and community organizations.

This inter-municipal apparatus of environmental governance is politically supported by the Department of Saint-Louis and led by the Regional Development Agency of Saint-Louis. This framework is a niche of opportunity for the Department of Saint-Louis to guide and catalyze initiatives for the preservation of natural spaces including mangrove.

Background Information

Act III of decentralization in Senegal promotes the territorialization of public policies and the consolidation of links between territorial authorities.

It is for this purpose that the Department and the municipalities have created an inter-municipal agreement for efficient governance of the territory and urban development respecting environment.

The agreement is governed by a departmental decree and a multi-stakeholder agreement to govern the territorial organization around the management of ecosystems to contribute to SDGs.

发展目标做出贡献。

起源

1-1- 位于西非最北端的塞内加尔圣路易斯省红树林带占地共 1,000 公顷。由于气候变化和人类活动造成的压力，该红树林带正以每年 9 公顷的速度退化，濒临灭绝。该情况主要见于圣路易斯省管辖下的 3 个城市。当地民选官员并没有将红树林的保护工作充分纳入该地区的可持续发展政策中。以社区为基础的保护举措没有得到充分协调。城市发展战略也未能让该地红树林发挥其价值。由于地方当局已经意识到这些自然地带区域管理方面出现的问题，圣路易斯省区域发展局及 非政府组织“伙伴关系”（Le Partenariat）对意在保护红树林的跨市合作、将红树林与地方发展相结合等相关项目的实施表示了大力支持。

保护与修复圣路易斯省红树林带的跨市合作项目旨在通过当地合作伙伴（尤其是地方当局）与人民的协商，促进生态系统与生物多样性的可持续性、统一性以及规划性管理。基于经区域行为体批准生效的《省行动计划》，通过一系列围绕红树林带适应性强、组织性高的经济活动，本项目得以推动地方经济发展、制定具有适应性的城市规划政策。

圣路易斯省关于环境治理的跨市协商框架中推出了一项具有革新意义的举措，以全面确保地方公共政策在地方发展、可持续性以及团结统一三方面的区域化。这一行动使我们能够推动保护自然资源和发展经济的地方举措，以便在行为体领导的地方项目与现有领土的规划工具之间建立系统性联系。在圣路易斯省区域发展局的支持下，我们制定了现状分析和行动计划。

在该跨市合作项目的带领下，多个机构、技术、私营企业以及社区行为体聚集建立了一个多方利益相关者生态系统（50 个组织）与战略合作伙伴关系。该合作体



Origins

The mangrove of Saint-Louis of Senegal (1000 ha) is the northernmost of West Africa and is threatened with extinction with a rate of loss of 9 ha/year due to climatic and anthropogenic pressures. It polarizes 3 municipalities in the Department of Saint-Louis. Local elected officials had not sufficiently integrated mangrove protection into their local sustainable development policies. The community-based conservation initiatives were not coordinated. Urban development strategies did not allow the mangrove to play its role. Faced with these problems related to the territorial management of natural areas and because of the awareness of local authorities, the ARD and the NGO Le Partenariat support the implementation of a dynamic of safeguarding the mangrove through an inter-communal approach and participatory local development.

The objective of the inter-municipal dynamics for the safeguard and enhancement of the mangrove of Saint-Louis is to promote sustainable, integrated, and planned management of the ecosystem and its biodiversity by local partners, particularly the local authorities, in consultation with the local people. The initiative promotes local economic developments and resilient urban planning policy through the promotion of resilient and structured economic activities around mangrove on the basis of the Departmental Action Plan validated by territorial actors.

The innovation, brought by the Inter-municipal Consultation Framework for Environmental Governance in the Department of Saint-Louis, is precisely to ensure the territorialization of local public policies on issues of local

系与西非五大三角洲协调合作，其成员由国际与地方民间社会行为体组成，与塞内加尔、毛里塔尼亚、冈比亚、几内亚比绍各国的人民与团体合作，保护和修复红树林带。

自 2012 年以来，气候团结基金 (FSF) 及其基金会对圣路易斯行政区第一个红树林保护项目提供了协助支持。自此，该环境保护项目正式展开（种植红树林、提高人们环保意识、建立网络等）。在 2017 年到 2020 年，一项由地方当局与服务机构实施的国家级项目得到了欧盟的支持。圣路易斯省为该项目提供了两名人员。非政府组织“伙伴关系”及区域发展局也对技术人才进行了动员。

创新

该项目就 2012-2020 年期间地域、制度以及运营的曲线走势图进行了调查。2012 年，该项公共项目仅由圣路易斯行政区发起。到 2013 年，邻近市政当局加入该项目。再到 2015 年，根据《分权法案三》，随着圣路易斯省成为地方当局，该项目也一跃成为了省级项目。在省区域发展局及非政府组织“伙伴关系”的支持下，地方当局展示和重申了这一政治愿景。该项目于 2018 年斩获了年度塞内加尔地方卓越领导力大奖。

随着圣路易斯行政区得到的投资增多，受支持项目中存在的区域不平衡问题也初现端倪。在跨市合作协议的框架中，特别强调地区当局需确保平衡各个项目的资金，从而避免任何纷争。例如，现在的级联项目资助金是由地方和地区当局按额分配的。一些住户仍然在红树林中伐木取柴。为解决该问题，此框架提出铺设沼气网，以确保这些家庭的能源供给；同时在学校采取措施加强社区意识。

成效

2016 年生效的《圣路易斯省发展计划》(PDD) 特别强调保护湿地生态系统。

development, sustainability and solidarity. The action makes it possible to catalyse local initiatives in the field of natural resource conservation and local economic development in order to systematically establish the link between local initiatives led by actors and existing territorial planning tools. With the support of the ARD of Saint-Louis, a diagnosis and an action plan have been developed.

A multi-stakeholder ecosystem (50 organizations) and strategic partnerships have been set up by the inter-communal dynamic that brings together institutional, technical, private sector and community actors. This Saint-Louis device has integrated the 5 Deltas. It is a group of international and local civil society actors working with people and communities of Senegal, Mauritania, Gambia and Guinea Bissau to preserve and enhance mangroves.

Since 2012, the Climate Solidarity Fund (FSF) and Foundations has supported the first project of the Commune of Saint-Louis on mangrove preservation. That was an occasion to start the environmental dynamic (planting mangrove, sensitizing people, networking, etc.). From 2017 to 2020, the EU supported a national project implemented by local authorities and services. The Department invested 2 persons on projects. NGO Le Partenariat and the ARD have mobilized technical support staff.

Innovative aspects

The dynamics surveyed a curve of territorial, institutional, and operational evolution that galloped from 2012 to 2020. In 2012, the initiative was communal, carried only by the Commune of Saint-Louis. In 2013, the action involved neighboring municipalities. In 2015, with the establishment of the department as a local authority by Act III of the Decentralization, the initiative took on a departmental dimension. This political wish displayed and renewed by local authorities with the support of the ARD and the NGO Le Partenariat. The initiative was awarded at the Senegal Local Leadership Excellence Award in 2018.

It was initially noted that there was a territorial imbalance in the projects supported, as the Commune of Saint-Louis received more investments. In the framework of an inter-municipal agreement, it is especially recommended to ensure that the projects are financed in balance among the territorial authorities to avoid any quarrels. For example, cascading project grants are now made by quota according to local and regional authorities. Some

2019 年，圣路易斯省市政局启动了《城市总体规划》（PDU）的修订工作，并发现了红树林与社会住房之间智慧共生的可能性。直到今天，人们开始承担起对红树林的责任，积极加入到相关的修复与保护工作中。

经过 9 年的干预，该举措获得了成功。超过 50 公顷的红树林得到了再生，相当于每年 350 吨的碳封存量。据林业服务部门估算，红树林每年的生长速率达到 7%，而砍伐率则下降了 25%。将近 8 万人意识到了护林的重要性，并获得了一定的资助，其中包括 2.8 万名成年男性，2.6 万名成年女性，2.5 万名青少年（包括 1.2 万名儿童）以及 1,350 名残障人士。

区域发展局、非政府组织“伙伴关系”以及省议会推动了地方项目的监测工作。在季度会议上，项目的运营进度将上报给协商框架。红树林测绘工具、生态系统区域分析、跨社区行动计划以及行为体和项目数据库是支持各地区检测与评估的主要工具。同时制作并分发了相关视频与宣传手册。

涵盖了社会各阶层的全面参与是协商框架工作机制的关键。事实上，青少年和妇女也得到了项目资金的支持，获得就业机会与财富。该项目还建立了一个区域培训体系。在 3 个目标城市中，共 19 所学校启动了一项环境教育项目。通过社区外展活动，长者们讲述红树林繁盛时期的历史故事，鼓励年轻人积极参与红树林的修复与再生工作。

保护地方社区的资源与生计一直是红树林保护与修复工作的重点。通过减少洪水、丰富资源、提高收入、创造绿色就业机会、了解可持续发展问题，尤其是建立地方包容性对话框架，社会福祉得到了提升。从空间角度来看，地方当局已经成功地将城镇化与红树林保护工作连接在一起。

这项跨市合作项目直接影响了 8 万

households continued to clear mangroves for firewood. The framework then initiated a process of biogas dissemination to ensure an energy transition of the households in question while strengthening community awareness in schools.

Desired change or outcome

The Saint-Louis Departmental Development Plan (PDD), validated in 2016, pays special attention to wet ecosystems. In 2019, the Municipality of Saint-Louis launched a process of revision of its Urban Master Plan (PDU) with also an awareness of the intelligent cohabitation between mangrove spaces and social housing. People today have a responsible attitude towards mangroves and participate in restoration and preservation actions.

Successful results were obtained over 9 years of intervention. More than 50 ha of mangrove have been regenerated. This is equivalent to a sequestration rate of 350 tons of carbon annually. The mangrove growth rate is estimated by forestry services at 7% per year and the slaughter rate is down by 25%. Nearly 80,000 people have been sensitized and supported, including 28,000 adult men, 26,000 adult women, 25,000 young people including 12,000 children, and 1,350 people living with a disability.

The team ARD, NGO Le Partenariat and the Departmental Council facilitate the monitoring of local dynamics. The operational progress of the projects is reported to the consultation framework during the quarterly meetings. The mangrove mapping tool, the territorial diagnosis of ecosystems, the intercommunal action plan and the database of actors and initiatives are the main tools to support the monitoring and evaluation of dynamics. Videos and brochures are produced and diffused.

The inclusive participation of all social strata has been the linchpin of the consultation framework. Indeed, young people and women have received funding for projects to create jobs and wealth. A territorial coaching system has been set up. An environmental education program has been launched in 19 schools in the 3 target municipalities. Through community outreach, the elderly people tell historical stories about the abundant periods of mangrove and encourage young people to actively contribute to its regeneration.

Protecting the resources and livelihoods of local communities has been a major focus of the mangrove conservation and enhancement process. Social well-being has been felt through the reduction of floods, the abundance of resources, the improvement of incomes, the creation of green jobs, the



人，他们生活在红树林带附近的村庄和社区并常年以该生态系统维持生计。因此，2.8 万名成年男性、2.6 万名成年女性、2.5 万名青少年（包括 1.2 万名儿童）以及 1,350 名残障人士得益于该项目，得到了培训机会，提高了护林意识。

保持创新的措施

在权力下放和将红树林与地方发展相结合的进程中，该项目得到的制度性支持是其持续发展的重要保证。社区间协议、相关工具以及该项目与西非五大三角洲网络的整合是可持续性与可视性的保证。

经验

自 2015 年以来，在西非五大三角洲网络下，红树林保护利益相关方之间的经验共同资本化进程由此启动。因此，在区域发展局和非政府组织“伙伴关系”的支持下，圣路易斯省议会编制了一份经验系统化表单，并在一工具箱中分享了该表单。在冈比亚、几内亚比绍以及塞内加尔其他省中，地方和地区当局已准备在各自的国家或领土中借鉴该项目。在 2015 年到 2020 年期间，圣路易斯省至少进行了 3 次网络调研之旅，以学习考察该项目。

如果其他城市模仿我们的项目，成功地建立起社区间环境治理合作项目，他们应对气候变化的能力将有更好的提升。我们乐意为希望学习并借鉴该项目的城市提供、分享经验系统化表单。

knowledge of sustainable development issues and especially the existence of a framework for inclusive local dialogue. From a spatial point of view, local authorities have been able to link urbanization to the preservation of concentrates.

The inter-municipal initiative directly affects 80,000 people whose villages and neighborhoods are close to the mangroves and who use the ecosystem to survive. Thus, 28,000 adult men, 26,000 adult women, 25,000 young people including 12,000 children, and 1,350 people living with a disability have benefited from projects, training and awareness.

Measures to sustain innovation

The institutional anchoring of the initiative in the processes of decentralization and participatory local development is an indisputable guarantee for the sustainability of the initiative. The agreements between communities, the tools and the integration of the framework into the West African network 5 Deltas is a guarantee of sustainability and visibility.

Learning aspects

Within the West African Network 5 Deltas, a process of mutual capitalization of experiences between stakeholders in mangrove conservation has been launched since 2015. Thus, the Departmental Council of Saint-Louis, with the support of the ARD and the NGO Le Partenariat, has produced a sheet of capitalization of the experience which is shared in a toolbox. In Senegal, the Gambia and Guinea Bissau, local and regional authorities are ready to replicate the initiative in their respective countries or territories. At least 3 Network study trips were conducted in Saint-Louis between 2015 and 2020 to learn about the initiative.

If other cities succeed in establishing an inter-communal dynamic of environmental governance like us, they would be better able to cope with urban climate challenges. Capitalization sheets are available and shared with all cities that wish to learn the initiative and replicate it.



项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 12：采用可持续的消费和生产模式
- ◆ 目标 13：采取紧急行动应对气候变化及其影响
- ◆ 目标 14：保护和可持续利用海洋和海洋资源以促进可持续发展
- ◆ 目标 15：保护、恢复和促进可持续利用陆地生态系统，可持续管理森林，防治荒漠化，制止和扭转土地退化，遏制生物多样性的丧失

(2) 《新城市议程》

- 促进建设更清洁的城市
- 加强城市降低灾害风险和影响的能力
- 为应对气候变化，采取行动减少温室气体排放
- 加强社会联系和支持创新、绿色倡议

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 12: Ensure sustainable consumption and production patterns
- ◆ Goal 13: Take urgent action to combat climate change and its impacts
- ◆ Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- ◆ Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

(2) New Urban Agenda

- Promote measures that support cleaner cities
- Strengthen resilience in cities to reduce the risk and the impact of disasters
- Take action to address climate change by reducing their greenhouse gas emissions
- Improve connectivity and support innovative and green initiatives

南非 开普敦

Cape Town, South Africa

“绿色开普（GreenCape）” 西开普工业共生计划

Western Cape Industrial Symbiosis Programme (WISP)
delivered by GreenCape



城市基本信息

人口规模：4,000,000
人口增长率（%）：3.00
面积（平方公里）：2,445
人口密度（人 / 平方公里）：1,600
人均国内生产总值（美元）：6,400
基尼系数：0.62
支柱产业：制造业、贸易、金融业、社区服务

BASIC CITY DATA

Population size: 4000000
Population Growth Rate (%): 3.00
Surface Area (sq.km): 2445
Population Density (people/sq.km): 1600
GDP Per Capita (U.S.\$): 6400
GINI Index: 0.62
Main Source of Prosperity: Manufacturing, Trade, Finance, Community services

摘要

西开普工业共生计划是一项免费的便利化服务，旨在为成员公司之间搭建互惠互利的联系或“协同合作”。该项目在公司之间建立联系，以便其能够通过发掘和利用未使用或剩余的资源（如材料、能源、水、资产、物流、专业知识等）来获得商机，例如，一家公司的废物可以被另一家公司当作资源加以利用。西开普工业共生计划充当了目前制造业（尤其是中小型企业）缺乏的中立平台，利用其专有技能和技术专长为企业免费发掘可行的商机。它适用于制造业中不同规模和行业的所有企业。西开普工业共生计划可以促进资源交换，将被丢弃在垃圾场的废物变废为宝，为成员创造经济效益，减少生产过程的碳排放强度并创造就业机会，最终使制造业更具竞争力并以更强的适应性来应对气候变化。

背景

西开普工业共生计划是由西开普省经济发展和旅游部（DEDAT）于2013年4月发起的一项便利服务。该项目目前由开普敦市通过市长办公室提供资金，是“市长可持续发展系列项目”中的一部分。西开普工业共生计划是该市推动“零废物填

Abstract

The Western Cape Industrial Symbiosis Programme is a free facilitation service that seeks to create mutually beneficial links or “synergies” between member companies. The programme connects companies so that they can identify and realize the business opportunities enabled by utilising unused or residual resources (materials, energy, water, assets, logistics, expertise) i.e., one company’s waste can be used by another as a resource. WISP fills a gap that currently exists in the manufacturing sector (most notably in SMEs) - a neutral platform, dedicating capacity and technical expertise to identify actionable opportunities, at no cost to companies. It is available to all companies in the manufacturing sector, no matter its size or to which industry it belongs. The resource exchanges facilitated by WISP divert waste from landfill, generate financial benefits for members, reduce the carbon intensity of production processes and create jobs, ultimately making the manufacturing sector more competitive and resilient to climate change.

Background Information

WISP is a free facilitation service that was initiated by the Western Cape Department of Economic Development and Tourism (DEDAT) in April 2013. It is currently funded by the City of Cape Town through the Mayor’s Office and is part of the Mayor’s Portfolio of Sustainability Initiatives. WISP is one of the City’s vehicles to drive its Zero Waste to Landfill Strategy. The programme is delivered by GreenCape, a not-for-profit company that works in Africa to grow the green economy.

埋战略”的举措之一。该项目由绿色开普（GreenCape）开展，该公司是一家致力于发展非洲绿色经济的非营利性公司。

起源

最初，该项目是为了解决垃圾填埋空间不足和经济发展中出现的失业问题。该项目旨在将垃圾场中的废物变废为宝，并通过产业共生（IS）实施过程中的各种增值介入措施来刺激经济。该项目有助于将高消耗、高浪费的线性经济模式转变为更循环的经济模式，在这种模式中，再生原料可重新整合到经济活动中。

西开普工业共生计划作为一个中立的平台，填补了当前制造业（尤其是中小型企业）存在的空白，利用其专有技能和技术专长为企业免费发掘可行的商机。它适用于制造业中不同规模和行业的所有公司。西开普工业共生计划可以促进资源交换，将被丢弃在垃圾场的废物变废为宝，为成员创造经济效益，减少生产过程的碳排放强度并创造就业机会，最终使制造业更具竞争力并以更强的适应性来应对气候变化。

应用产业共生模式和循环经济原则，确保了在开发原始资源之前最大程度地利用现有可用资源，这可以让经济增长脱离资源消耗。该项目弥合了传统上相互独立的工业部门之间的沟通差距，并加强了相关企业在社会环境和经济绩效方面的互利合作。企业可以探索各种废物处理技术，并选择最适合其目标的技术。

全市

公共合作伙伴：

西开普省经济发展和旅游部（DEDAT）最初于2013年至2016年资助该项目。

开普敦市自2016年起至今一直担任该项目的出资方，开普敦大学与该大学的化学工程系进行合作研究。

Origins

Initially the initiative was created to address landfill airspace and unemployment issues the economy was experiencing. The intention was to divert waste away from landfills and stimulating the economy through the various value add interventions implemented through industrial symbiosis (IS). The initiative aids with transforming the largely consumptive and wasteful linear economy model into a more circular economy model where secondary materials can be integrated back into the economy.

WISP fills a gap that currently exists in the manufacturing sector (most notably in SMEs) - a neutral platform, dedicating capacity and technical expertise to identify actionable opportunities, at no cost to companies. It is available to all companies in the manufacturing sector, no matter the company size or to which industry it belongs. The resource exchanges facilitated by WISP divert waste from landfill, generate financial benefits for members, reduce the carbon intensity of production processes and create jobs; ultimately making the manufacturing sector more competitive and resilient to climate change.

Application of IS and circular economy principles ensures the maximum utilisation of available resources before virgin resources can be exploited which can lead to the decoupling of economic growth from resource use. The initiative bridges the communication gap between industrial sectors that do not traditionally associate with each other and increases collaboration to the mutual benefit of the businesses involved with regards to environmental social and economic performance. Business can explore various waste treatment technologies and select the most appropriate one for their purposes.

Public partnership:

Western Cape Department of Economic Development and Tourism (DEDAT) initially funded the programme from 2013 to 2016

The City of Cape Town – current funder of the programme since 2016

University of Cape Town – collaboration with the chemical engineering department on research

National Cleaner Production Centre – Collaborate on resource efficiency and cleaner production audits

Private Partners:

International Synergies Limited UK – offered technical and methodology support to initiate the programme

与国家清洁生产中心在资源利用效率和清洁生产审核方面进行合作。

私营合作伙伴：

英国国际协作有限公司为项目提供技术和方法支持。

该项目目前只有一个资金来源，每年申请一次。项目团队由三位全职推动人组成。必要时可以使用其他内部资源，如能源和水利团队。如果团队需要相关的专业知识，推动人可以使用各政府部门提供的人力资源。在相同领域中还会与其他公共组织和机构进行合作。

创新

该项目颇具革命性，因为它采用了某些企业在个体层面上已进行的实践（节点优化），并将其扩展到涉及多个企业的网络层面，从而使整个经济受益（系统优化）。由于废物处理现状在不断变化，项目采用了动态迭代的方法来实现目标，因此，这是一个具有适应性、渐进性的项目。该项目没有停留在回收垃圾场废物的这个环节上，而是转向对产业领域进行物料流向分析（MFA），以确定采取介入措施的时机，从而提高资源使用效率。将企业发展纳入全局会促成新业务的建立，从而可把握已发现的机会。

信誉不足——最初，西开普工业共生计划在本地没有证据能够表明实施产业共生模式的好处，导致企业由于缺乏对产业共生模式的信任和/或了解而不愿参与该项目。随着资源交换的完成和案例研究的创建，西开普工业共生计划的信誉得到确立，能更好地吸引新成员加入项目网络。

企业缺乏开展非核心活动的能力和技术专长，这意味着其只能将精力集中在核心活动上，而且某些企业（尤其是中小企业）在过去和现在都将可持续发展视为非核心活动。西开普工业共生计划通过向企业提供推动人来填补这一空白。

The programme currently has a single source of funding which is applied for on an annual basis. The programme is made up of a team of three full time facilitators. Other internal resources such as energy and water teams are leveraged when necessary. The facilitators have access to various human resources availed to them by various governmental departments, should the team require their relevant expertise. There is collaboration with other public organisations and institutes working within the same space.

Innovative aspects

The initiative is revolutionary as it takes what some businesses have been practicing at an individual site level (node optimization) and scales it up to a network level involving multiple businesses to the benefit of the whole economy (system optimization). It is adaptive and therefore evolutionary as it takes a dynamic and iterative approach to achieve results due to the ever-changing waste landscape. It has moved beyond landfill diversion to conducting material flow analysis (MFA) on industrial areas to determine opportunities for interventions to increase resource efficiency. The inclusion of enterprise development allows for the establishment of new business initiatives that take advantage of the opportunities identified.

Lack of credibility – Initially, WISP had little local evidence of the benefits of implementing IS, resulting in companies being reluctant to engage with WISP due to lack of trust and/or knowledge of IS. As resource exchanges were completed, and case studies created, WISP's credibility was established, and the programme was better able to recruit new members into the network.

Businesses' lack of capacity and technical expertise to implement non-core activities meant companies only focused efforts on core activities and sustainability was and continues to be seen as a non-core activity by some businesses, particularly within SMEs. WISP fills this gap by making facilitators available to companies.

Desired change or outcome

Increased awareness to environmental issues and how our economy is vulnerable to shocks and stresses like droughts and lack of skills. Over 70% of the businesses in our network of over 1000 companies are practicing resource efficiency in one form or another through commitments to divert waste from going to landfill by utilising more sustainable value add waste

成效

提高了企业对环境问题和经济脆弱性的认识，以及当地经济容易受到干旱、技能缺乏等冲击和压力的影响。在由1000多家企业组成的网络中，70%以上的企业通过采用可持续性更高的废物增值处理方案，将被丢弃在垃圾场的废物变废为宝，以各种形式实现资源利用效率。该项目主要在开普敦市集中开展，但也扩展到全省甚至全国。

我们采用的最重要指标是回收利用的废物数量，因为这很容易量化。根据这些数据，我们可以计算出企业的累计收益（企业由于出售部分废物而获得的额外收入，以及减少废物而降低的成本，节省了运输和处理费用），并使用这些数据向出资方和其他企业证明该项目的增值能力。这些数据汇总了所有企业的数据，并可按各产业部门进行拆解。

为了获得企业的支持，该项目从经济角度出发，让企业可以立即明白项目不会对其产生负面影响。推动人通过现场考察和会议直接参与业务。项目还拥有一个安全的数据库用于存储非共享的企业信息，并开发了碳计算器，计算资源交换可能减少的二氧化碳排放量。

该项目的对象是制造业领域的企业，并与学术界和相关政府部门密切合作，以确保创造有利于产业共生的繁荣环境。该项目最初由这三个利益相关者组成的指导委员会指导。该项目发挥学术界的专长，对在产业中发现的差距和机遇进行研究和开发，并向政府相关部门咨询各种政策和法规，以确保项目合法合规。利益相关者之间保持着信息传递，以确保在充分了解现状的情况下做出决策。

产业领域的创新是该项目的重点，但对创业者和中小型企业也应给予特别关注，因为他们在业务发展和理解绿色经济上需要最多的帮助。政府还努力将邻近社区的非正规社区（如拾荒者）与成熟企业



treatment options. The initiative's presence is primarily concentrated in the City of Cape Town but also extends to the whole province and even nationally.

The biggest indicator we use is the amount of waste diverted from going landfill as it is easily quantifiable. From the data we calculate benefits accrued to businesses (additional revenue due to businesses selling some of their waste streams, cost reduction due to reduced waste generation, avoidance of transport and disposal costs) and use this data to prove to funders and other businesses that the initiative is adding value. The data is aggregated for all the businesses and can be disaggregated per industrial sector.

To get buy-in from the businesses, the initiative is pitched from an economic point of view, so that businesses can immediately see that their bottom line will not be impacted negatively. Facilitators directly engage businesses through site visits and meetings. There is a secure database for storing company information which is not shared with anyone, and a carbon calculator was developed to measure CO₂e (carbon dioxide equivalent) emission reduction potential of the exchanges.

The initiative targets businesses in the manufacturing sector and works closely with academia and relevant governmental departments to ensure the creation of an enabling environment for industrial symbiosis to thrive. The programme was initially guided by a steering committee from these three stakeholders. Academia is leveraged for research & development based on gaps and opportunities identified in industry and relevant governmental departments are consulted on various policies and legislation to ensure

整合在一起，以实现互惠互利。

该项目直接让产业领域中的所有企业受益，从而确保业务连续性并维持就业岗位。展望未来，这些领域新增加的废物增值业务，将会为周边社区的低技能工人创造新的就业机会，惠及更多人。

保持创新的措施

该项目会随时间的推移而不断发展，以确保已完成的工作与不断变化的废物经济现状保持相关性。随后的每一年，该项目的传统核心活动都将增加一个新的层面，从提高个体资源利用效率扩展到优化整个新领域。

经验

其他城市可以借此了解产业界、学术界和政府共同合作实现经济可持续增长的方式。这三者之间通常存在信息鸿沟，与该项目类似的产业共生计划可通过增强三者间的三重螺旋合作来解决这个问题。通过资源共享，经济体可以让其经济增长脱离原始材料的消耗，从而减轻对环境的压力，让正在被大量消耗的自然资源可以得到保护，企业也能减少其碳足迹。实施该项目的企业始终愿意通过公开提供的案例研究来分享自身经验。城市之间也愿意开展合作，进行培训和分享关于如何实施项目的见解。实行该项目的非营利性组织也愿意举办培训讲习班，并与其他城市的其他组织合作以开展类似项目。

compliance with regulations. Information is relayed between the stakeholders to ensure decisions are made with a full understanding of the landscape.

The innovation focuses on industrial areas, but special attention is given to entrepreneurs and SMEs as they need the most assistance with regards to business development and understanding the green economy. Efforts are put into integrating informal businesses from neighboring communities like waste pickers with established businesses for mutual benefit.

The initiative directly benefits all businesses in the industrial areas ensuring business continuity and job retention. Going into the future, more people will be impacted by the initiative as new waste value-add businesses are added to the areas, creating new employment opportunities for low skilled labour in surrounding communities.

Measures to sustain innovation

The initiative evolves with time, making sure the work done is still relevant in the changing waste economy landscape. Each subsequent year a new layer is added to the traditional core activities of the initiative, the work has grown from making individual business resource efficient to optimizing whole new areas.

Learning aspects

Other cities can learn about how industry, academia and government can work together for sustainable growth of the economy. There is usually an information gap between these three spheres, an industrial symbiosis initiative such as this helps to bridge this gap by increasing triple helix collaboration. Through sharing of resources, economies can decouple economic growth from virgin material consumption putting less strain on the environment as the already depleting natural resources are preserved and businesses are able to reduce their carbon footprints. The businesses implementing the initiatives are always willing to share their learnings through case studies which are publicly available. The city is also willing to partner with other cities to train and share insights on how the initiative can be implemented. The NPO that delivers the programme is also willing to conduct training workshops and collaborate with other organisations in other Cities to deliver a similar initiative.



项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 8: 促进持久、包容性的可持续经济增长，促进充分的生产性就业，促进人人有体面工作
- ◆ 目标 9: 建造具备抵御灾害能力的基础设施，促进具有包容性的可持续工业化，推动创新
- ◆ 目标 12: 采用可持续的消费和生产模式
- ◆ 目标 13: 采取紧急行动应对气候变化及其影响

(2) 《新城市议程》

- 促进建设更清洁的城市
- 为应对气候变化，采取行动减少温室气体排放
- 加强社会联系和支持创新、绿色倡议

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- ◆ Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- ◆ Goal 12: Ensure sustainable consumption and production patterns
- ◆ Goal 13: Take urgent action to combat climate change and its impacts

(2) New Urban Agenda

- Promote measures that support cleaner cities
- Take action to address climate change by reducing their greenhouse gas emissions
- Improve connectivity and support innovative and green initiatives

美国 洛杉矶
Los Angeles, USA

可持续发展目标行动开源工具

Open Source Tools for Action on the SDGs



城市基本信息

人口规模: 3,979,576
人口增长率 (%) : 0.32
面积 (平方公里) : 1,300
人口密度 (人 / 平方公里) : 3,061
人均国内生产总值 (美元) : 70,802
基尼系数: 0.5
支柱产业: 金融业、专业和商业服务、创意产业和制造业

BASIC CITY DATA

Population size: 3979576
Population Growth Rate (%): 0.32
Surface Area (sq.km): 1300
Population Density (people/sq.km): 3061
GDP Per Capita (U.S.\$): 70802
GINI Index: 0.5
Main Source of Prosperity: Finance, Professional and Business Services, Creative Industry, and Manufacturing

摘要

在康拉德·N·希尔顿基金会 (Conrad N. Hilton Foundation) 和洛杉矶市长基金 (Mayor's Fund for Los Angeles) 的支持下, 洛杉矶于 2017 年底通过了可持续发展目标。我们的工作遵循以下两大原则:

(1) 利用可持续发展目标改善洛杉矶居民的生活。(2) 以透明的方式开发和共享工具。我们在地方一级为可持续发展目标行动开发了两个开源工具: 可持续发展目标数据报告平台 (Open SDG) 和可持续发展目标活动索引 (SDG Activities Index)。虽然可持续发展目标数据报告平台是为国家统计而制定, 但洛杉矶是第一个将其用于地方报告的城市。可持续发展目标活动索引是一个源于群众的、真实的百科全书, 收录了在洛杉矶推进可持续发展目标的各大组织, 该工具可进行搜索、导出, 并允许居民建立共享能力和了解可持续发展目标。这两种工具都有多人协作的超文本系统 (wikis), 其代码可被其他组织永久重用。

背景

洛杉矶市市长埃里克·加希提在 2017 年承诺洛杉矶市将致力于可持续发展目标, 他认为地方政府 (其服务最接近社区)

Abstract

Los Angeles adopted the SDGs in late 2017 with the support of the Conrad N. Hilton Foundation and the Mayor's Fund for Los Angeles. Two principles have guided our work: (1) to use the SDGs to improve the lives of L.A. residents and (2) to develop and share tools in a transparent way. We have pioneered two open source tools for SDG action at the sub-national level: the SDG Data Reporting Platform (Open SDG) and the SDG Activities Index. While Open SDG was developed for national statistics, L.A. is the first city to adapt it for sub-national reporting. The SDG Activities Index is a living, crowd-sourced encyclopedia of organizations advancing the SDGs in L.A. It is searchable, exportable, and allows residents to build shared capacity and learn about the SDGs. Both of these tools have wikis and their code can be reused by other organizations for good.

Background Information

Los Angeles Mayor Eric Garcetti committed L.A. to the SDGs in 2017, with an understanding that local governments (closest to the communities they serve) are critical for achieving the 2030 Agenda. The SDGs are now integrated in the City's sustainability plan (L.A.'s Green New Deal) as well as departmental strategic documents. In 2019, L.A. published its first Voluntary Local Review, containing a comprehensive mapping of City initiatives to the SDGs.

Origins

L.A. believes that cities are hubs for the innovative action that will

对实现《2030 年可持续发展议程》至关重要。可持续发展目标现被纳入了城市的可持续发展计划（《洛杉矶的绿色新政》）及部门战略文件当中。2019 年，洛杉矶发布了该市首个自愿地方审查报告，其中包含城市倡议实现可持续发展目标的全面规划。

起源

洛杉矶认为，城市是创新行动的中心，而创新行动是到 2030 年实现可持续发展目标的重点。我们通过三个途径来处理工作：衡量、动员和连接。开源工具有助于实现以下方面：衡量我们自己，以确定落实新项目的机会，与合作伙伴和实践者建立必要的伙伴关系——无论是在当地还是在全球可持续发展目标的实践区域内。通过这些工具，地方政府克服了在实施可持续发展目标时面临的共同挑战，并展现出了用全球共同语言处理地方问题所带来的附加价值。

我们目标是：（1）展示洛杉矶对衡量可持续发展目标进展的承诺；（2）将这种衡量进行分类，以确定随着整个城市的进步，我们的社区成员可能会落后的地方；（3）利用这些工具为实现可持续发展目标创建新的伙伴关系、项目和行动。

洛杉矶是目前全球唯一直接报告可持续发展目标指标的城市，我们采用上述工具报告进展，而任何想要进行报告的地方政府或组织均可复制使用该操作容易的工具。我们也是世界上唯一将公共、私人和非营利性部门的项目及组织聚集起来，并将其与可持续发展目标联系起来的城市，通过这种方式积极提升建设能力，以实现社区的目标。

我们的项目是政府、慈善事业、非营利性组织、私营部门和学术界间多部门合作的产物。该项目主要由康拉德·N·希尔顿基金会赞助，洛杉矶市长基金执行，由开放数据企业中心（Center for Open Data Enterprise）提供主要的技术支持。



be required to achieve the Goals by 2030. We approach our work along three avenues: measure, mobilize, and connect. Our open source tools are enablers for all of these: measuring ourselves to identify opportunities to mobilize new initiatives, and connecting with partners and practitioners to build the partnerships needed to do so - both locally and within the global SDG community of practice. These tools overcome a common challenge of local governments in implementing the SDGs and shows the value added in engaging local issues in a global shared language.

Our goal is to: (1) demonstrate L.A.'s commitment to measuring progress toward the SDGs, (2) disaggregating this measurement to identify where members of our community may be being left behind as progress is achieved for the City as a whole, and (3) utilize these tools to create new partnerships, initiatives, and action toward the SDGs.

L.A. is the only global city currently reporting directly on the SDG indicators, and we are doing so with tools that are easily replicated by any sub-national government or organization who wishes to do the same. We are also the only city in the world aggregating projects and organizations across the public, private, and non-profit sector and linking them to the SDGs; actively building capacity to achieve the Goals within our community.

Our initiative is the product of multi-sector partnerships between government, philanthropy, nonprofits, private sector, and academia. Our primary funding partner is the Conrad N. Hilton Foundation. Our implementation partner is the Mayor's Fund for Los Angeles. The Center for Open Data Enterprise has been the primary technical support. Our academic partners include five local universities and more than 110 students who have

我们的学术合作伙伴包括 5 所当地大学和 110 多名学生，他们是洛杉矶项目的思想领袖和推动者。该项目的两个平台均使用开源代码构建，其他城市也可以免费使用。

洛杉矶可持续发展计划由洛杉矶市和康拉德·N·希尔顿基金会共同资助，由洛杉矶市长基金管理。具体的数据平台项目得到了开放数据企业中心在技术资源方面的支持。亚马逊云托管由洛杉矶信息技术机构支持。5 所大学合作伙伴也支持他们的学生与城市合作开发这些工具。这两大工具均可免费使用，并对其他城市开放。

创新

洛杉矶的开源工具具有革命性意义，因为全世界没有其他城市创造并分享免费技术，让所有致力于推进可持续发展目标的人都可以使用。洛杉矶是首个使用可持续发展目标数据报告平台的城市，并将其改造为本地使用，在此过程中为其共享代码做出贡献。这包括将可持续发展目标和指标本地化的方法，以及调整可持续发展目标数据报告平台和可持续发展目标活动索引为多人协作的超文本系统，供任何地方使用。

一些主要的挑战包括：确保可持续发展目标的具体目标和指标语言包括地方政府，确定符合国际标准或可作为代理措施的数据来源；推广可持续发展目标活动索引，以确保其持续增长和效用。我们为自己的报告开发了一套修改可持续发展具体目标和指标语言的方法，通过我们的开放数据门户和 GeoHub，与合作伙伴一起确定代理数据源，并与城市的社区委员会、非营利性委员会和社区组织合作，以提高对可持续发展目标活动索引的认识，从而解决了以上的问题。

成效

衡量和报告实现可持续发展目标进展的关键在于工具，但如果没有新的项目计划和能力来构建和维持这些工具，我们无

been thought leaders and engines for L.A.'s work. The two platforms are built using open source code and is freely available to other cities.

The SDG program in Los Angeles is funded jointly by the City of Los Angeles and a grant from the Conrad N. Hilton Foundation, administered by the Mayor's Fund for Los Angeles. The specific data platform initiative was supported by technical resources from the Center for Open Data Enterprise. The Amazon cloud hosting is supported by the City of L.A.s Information Technology Agency. Five university partners have also supported their students to work with the city in developing these tools. Both of the tools are free and entirely open source to other cities.

Innovative aspects

L.A.'s Open Source Tools are revolutionary, as no other city in the world has created and distributed free technology, available to anyone working to advance the Goals. L.A. is the first city to use the Open SDG platform, adapting it for local use and contributing to its shared code in the process. This includes the methodology for localizing SDG targets and indicators, and the wikis to adapt both Open SDG and the Activities Index for use anywhere.

Some major challenges include ensuring that SDG target and indicator language include local governments, finding data sources that adhere to the international standards or can serve as proxy measures, and marketing the SDG Activities Index to ensure its continued growth and usefulness. We have overcome all of these challenges by developing a methodology to revise the SDG target and indicator language for our own reporting, working through our Open Data Portal and GeoHub and with partners to identify proxy data sources, and engaging with the City's neighborhood councils, non-profit council, and community-based organizations to ensure awareness of the Activities Index.

Desired change or outcome

Measuring and reporting progress toward the Goals are tools but will not get us to the future we want without new initiatives and more capacity to build and sustain them. Building these tools gives us the foundation from which to identify where and who we may be leaving behind and identifies those partners with whom we can work to get there. Cities like L.A. are defining a new role for sub-national governments in an international

法达到自己想要的未来。构建这些工具会给我们提供一个基础，从中我们可以确定可能会忽略的地方和人群，并确定我们可以与哪些伙伴合作以实现目标。像洛杉矶这样的城市在国际发展议程中正在为地方政府定义一个新的角色，同时，利用可持续发展目标的共同语言，让社区参与到这场全球运动的工作中。

可持续发展目标数据报告平台收集和分析我们在可持续发展目标取得进展的数据。我们根据当地数据报告了 150 多个指标。有 30 多项指标按性别、种族和年龄等人口特征分类。目前，可持续发展目标活动索引涵盖所有 17 个目标的 153 个不同项目和组织。我们还跟踪了可持续发展目标数据报告平台（每月 250 人）和可持续发展目标活动索引（每月 350 人）的用户数。

可持续发展目标监测和动员的下一步是：利用这些数据确定从现在到 2030 年的差距。我们目前正在这个领域进行创新，开发新的分析和可视化工具，帮助我们和其他城市确定现存差距。在数据报告平台中，我们正在构建一个趋势分析工具的原型，帮助我们规划 2030 年前的定量数据，从而帮助我们确定需要加快行动的指标和具体目标。

该数据报告平台的开发得到了多部门伙伴关系的支持。利益相关者主要包括居民、合作伙伴和研究人员，他们可以使用可持续发展目标数据报告平台上报告的数据源，并希望为洛杉矶的这项工作提供支持。当地大学的学生也在平台的实施中发挥了重要作用。虽然项目的主要利益相关者集中在洛杉矶，但我们的用户遍布全球。

该项目的重点是洛杉矶市，但在某些情况下，我们报告的数据涉及更大的司法管辖区，包括洛杉矶县和加利福尼亚州，特别是与政策有关的非统计指标，以及城市直接主管部门以外的职能，包括公共卫



development agenda, all while using the shared language of the SDGs to bring our community into the work of this global movement.

Open SDG is in itself an initiative to collect and analyze data on our progress on the SDGs. We are reporting on over 150 indicators with local data. Over 30 of the indicators are disaggregated by various demographic characteristics including gender, race, and age. The Activities Index currently has 153 different projects and organizations across all 17 goals. We also track the number of users of the Open SDG platform (250 monthly) and the SDG Activities Index (350 monthly).

The next step in SDG monitoring and mobilization is to use the data to identify gaps to 2030. We are currently innovating in this space and developing new analysis and visualization tools that will help us and other cities to do so. In our data platform, we are prototyping a trend analysis tool that will help us project the quantitative data to 2030 to help us identify indicators and targets that need accelerated action.

The data platform was developed with the support of a multi-sector partnership. Our stakeholders are residents, partners, researchers who can access the data sources reported on the SDG platform and want to support L.A. in this work. Students from our local universities have been instrumental in the implementation of the platform as well. While our primary stakeholders are focused on Los Angeles, our users span the globe.

The initiative focuses on the City of Los Angeles but in some cases, we report data at larger jurisdictional levels including the County of Los Angeles

生和初等 / 中等教育。

洛杉矶市有 400 万人口，但该项目涉及该县的 1,000 万居民和该地区的 1,900 万居民。此外，英国至少有 13 个城市、南非有 1 个城市正在改造这一平台，使其本地化，并使数百万居民受益。

保持创新的措施

云托管由洛杉矶信息技术机构维护。在洛杉矶市长基金的支持下，该平台的维护和创新由市长办公室的一个全职团队完成。我们所有的工作也通过 Github 记录，并维护在一个实时的多人协作的超文本系统中。

经验

可持续发展目标数据报告平台和可持续发展目标活动索引是可持续发展目标行动的强大工具。虽然可持续发展目标数据报告平台是由国家政府为国家一级报告而开发，但也可以灵活使用于包括地方政府报告在内的其他案例。其他城市已向我們寻求支持，以开发自己的本地平台。我们已记录了对平台所做的所有修改，并发布在一个开放的多人协作的超文本系统上，其他城市也可以效仿。我们开发了可持续发展目标活动索引，将可持续发展目标动员的社区活动集合起来，同时建立了开源，在 GitHub 上共享信息。我们的团队不断参加网络研讨会和学习会议，以介绍这两种工具并分享我们的经验教训。随着人们对可持续发展目标本地化的兴趣和关注不断增加，城市应继续创新工具和方法，这点非常重要。

and the State of California, especially for policy-linked, non-statistical indicators, and for those functions that reside outside the City's immediate authorities, including Public Health and primary/secondary Education.

The City of Los Angeles has a population of 4 million people, but this initiative is relevant to the 10 million residents of the County and the 19 million residents of the region. Furthermore, at least 13 cities in the UK and 1 city in South Africa are in the process of adapting this platform for their use and to the benefit of their millions of residents.

Measures to sustain innovation

Cloud hosting is maintained by the City's Information Technology Agency. Maintenance and innovation of the platform is done by a full-time team in the Office of the Mayor with support from the Mayor's Fund for Los Angeles. All of our work is also recorded and maintained in a live Wiki via GitHub.

Learning aspects

Open SDG and the Activities Index are powerful tools for action on the SDG. Though Open SDG was developed for and by national governments for national-level reporting, it is flexible for other use cases including local government reporting. Other cities have already approached us for support in their own development of their local platforms. All the modifications we have made to our platform has been recorded and published in an open Wiki that other cities can follow. We developed the Activities Index to aggregate community-based activities on SDG mobilization, which also built open source and shared on GitHub. Our team continuously participates in webinars and learning sessions to showcase both tools and share our lessons learned. As interest and focus on localization of the SDGs grows, it is important that cities continue to innovate tools and methodologies for and by cities.



项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 1: 在全世界消除一切形式的贫困
- ◆ 目标 2: 消除饥饿, 实现粮食安全, 改善营养状况和促进可持续农业
- ◆ 目标 3: 确保健康的生活方式, 促进各年龄段人群的福祉
- ◆ 目标 4: 确保包容和公平的优质教育, 让全民终身享有学习机会
- ◆ 目标 5: 实现性别平等, 增强所有妇女和女童的权能
- ◆ 目标 6: 为所有人提供水和环境卫生并对其进行可持续管理
- ◆ 目标 7: 确保人人获得负担得起的、可靠和可持续的现代能源
- ◆ 目标 8: 促进持久、包容和可持续经济增长, 促进充分的生产性就业和人人

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 1: End poverty in all of its forms everywhere
- ◆ Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- ◆ Goal 3: Ensure healthy lives and promote well-being for all at all ages
- ◆ Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- ◆ Goal 5: Achieve gender equality and empower all women and girls
- ◆ Goal 6: Ensure availability and sustainable management of water and sanitation for all
- ◆ Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all
- ◆ Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

获得体面工作

◆ 目标 9: 建造具备抵御灾害能力的基础设施, 促进具有包容性的可持续工业化, 推动创新

◆ 目标 10: 减少国家内部和国家之间的不平等

◆ 目标 11: 建设包容、安全、有抵御灾害能力和可持续的城市及人类住区

◆ 目标 12: 采用可持续的消费和生产模式

◆ 目标 13: 采取紧急行动应对气候变化及其影响

◆ 目标 14: 保护和可持续利用海洋和海洋资源以促进可持续发展

◆ 目标 15: 保护、恢复和促进可持续利用陆地生态系统, 可持续管理森林, 防治荒漠化, 制止和扭转土地退化, 遏制生物多样性的丧失

◆ 目标 16: 创建和平、包容的社会以促进可持续发展, 让所有人都能诉诸司法, 在各级建立有效、负责和包容的机构

◆ 目标 17: 加强执行手段, 重振可持续发展全球伙伴关系

(2) 《新城市议程》

为所有市民提供基本生活服务

确保所有公民机会均等且不受歧视

促进建设更清洁的城市

加强城市降低灾害风险和影响的能力
为应对气候变化, 采取行动减少温室气体排放

完全尊重难民、移民、境内流离失所者的权利, 无论其处于何种移徙状态

加强社会联系和支持创新、绿色倡议
增加安全、交通便利和环保的公共空间

◆ Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

◆ Goal 10: Reduce inequality within and among countries

◆ Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

◆ Goal 12: Ensure sustainable consumption and production patterns

◆ Goal 13: Take urgent action to combat climate change and its impacts

◆ Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

◆ Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

◆ Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

◆ Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

(2) New Urban Agenda

Provide basic services for all citizens

Ensure that all citizens have access to equal opportunities and face no discrimination

Promote measures that support cleaner cities

Strengthen resilience in cities to reduce the risk and the impact of disasters

Take action to address climate change by reducing their greenhouse gas emissions

Fully respect the rights of refugees, migrants, and internally displaced persons regardless of their migration status

Improve connectivity and support innovative and green initiatives

Promote safe, accessible, and green public spaces

共同住宅，安乐晚年 ——“老得其所”城市填充计划

Cohousing for Ageing Well
– Designing Urban Infill for Ageing in Place



城市基本信息

人口规模: 1,320,000
人口增长率 (%) : 1.70
面积 (平方公里) : 3,258
人口密度 (人 / 平方公里) : 400
人均国内生产总值 (美元) : 61,000
基尼系数: 0.35
支柱产业: 旅游业、农业和酒店业

BASIC CITY DATA

Population size: 1320000
Population Growth Rate (%): 1.70
Surface Area (sq.km): 3258
Population Density (people/sq.km): 400
GDP Per Capita (U.S.\$): 61000
GINI Index: 0.35
Main Source of Prosperity: Tourism, agriculture, and hospitality

摘要

阿德莱德地区人口老龄化加剧，人们的物质、财务和社会需求发生变化时，却发现缩小住房规模和留在社区的选择有限。城市填充建筑能增加居住密度，但可能不利于老年人，并可能产生有害的社会和环境影响。

“共同住宅，安乐晚年”项目采用老年居民与社区共同设计原则，提供了新的共同住宅选择。这些建筑的设计旨在保持街道特色，增强社会凝聚力，保持深层根区和花园空间，有利于健康和气候，并提供无障碍的共居设施，增强居民的互动。

该项目由地方议会、国家规划委员会和基础设施部合作推出。其成果包括一套与当地的住宅风格呼应的创新共同住宅设计，促进老龄化地区的发展。我们向州政府提交了一份提案，提出新的规划规范，以促进实现新的共同住宅概念

背景

老年居民与社区共同设计原则体现了共同住宅的设计，保持街道特色，保留健康的深层根区花园空间，同时提供便利的共同住宅设施，增强居民互动。该项目由地方议会、国家规划委员会和基础设施部合作推出。其成果包括一套与当地的住宅

Abstract

Adelaide is ageing but individuals find limited options to downsize and stay in their community when their physical, financial, and social needs change. The urban infill can increase dwelling density but may not be age-friendly and can have detrimental social and environmental impacts.

Cohousing for Ageing Well used community co-design principles with older residents to inform new cohousing options. These were designed to retain street character for social cohesion, maintain deep root zone and garden space for health and climate benefits and provide accessible cohousing with shared amenities to enhance residents' interaction.

The project collaborators included local Councils, the State Planning Commission, and the Department for Infrastructure. Outcomes included a suite of innovative cohousing designs sympathetic to local housing styles yet designed to promote ageing in place. A submission was made to the State Government to propose new planning codes that could facilitate the transfer of these new cohousing concepts into reality

Background Information

Community co-design principles with older residents informed the cohousing designs which retained street character, maintained deep rootzone gardens for health whilst providing shared amenities to promote interaction. The project collaborators included local Councils, the State Planning Commission, and the Department for Infrastructure. Outcomes included a suite of innovative cohousing designs sympathetic to local housing styles yet designed to promote ageing in place. A submission made to State Government

风格呼应的创新共同住宅设计，促进了老龄化地区的发展。我们向州政府提交了一份提案，提出新的规划规范，以确保实现该设计。

起源

希望在社区安享晚年的老年人意识到其住房不再适合自身需要，或不想独自生活时，却发现缩小住房规模的选择有限。受到开发商青睐的城市填充建筑方案虽能增加居住密度，但并不一定适合老年人，而且会对街道景观、环境和社区精神产生显著的负面影响。共同住宅设计旨在重新开发现有住房，为老年人创造具有社会凝聚力的住房选择，然而，这种设计非常稀缺。

该项目的目标广泛且涉及多个领域，包括：

- 提高国家和地方政府对城市新填充计划的战略认识，有助于实现当地养老，同时提供环境效益。
- 提倡修改《国家规划和设计法规》，使地方议会能够批准重新开发现有特色住宅的设计，为 1 处填充式建筑提供 2 或 3 个模型。
- 共同设计共同住宅，建立业务和治理结构。

该项目采取了创新的“替代填充”住房模式以及国际共同住宅的原则，并采用当地老年居民共同设计，以创新和适应当地文化和需求。探索理想的共享设施选择，确定老年社区的空间预算优先事项，创建新的“精简共居”，以满足澳大利亚城市居民的需求。政府以便捷性和宜居性为标准创造了新的居住质量，但目前该项目还没有纳入城市规划政策。

安利市（牵头合作伙伴）与其他地方政府机构共同提供了项目管理和地方规划的专业知识，从而向公共国家计划委员会和基础设施部门提供创新信息流，这些机构计划将当前地方规划法规整合为州级政策。因此，行动研究直接影响到新政策。

proposed new planning codes to ensure the designs can be realized.

Origins

Older individuals wishing to age in place in their community often find limited options to downsize when their housing no longer suits their needs or when they wish to avoid living alone. The urban infill favored by developers whilst increasing dwelling density is not necessarily age-friendly and has significant negative impacts on cityscape, environment, and community spirit. A paucity of cohousing designs exists to redevelop existing housing stock to create socially cohesive options for older adults.

The goals of the project were broad and cross-sector including:

- Raising State and Local government awareness of new infill strategies in urban areas that would enable ageing in place and provide environmental benefits.
- Advocating for a change in the State Planning and Design Codes that would enable local Councils to approve designs that redevelop existing character housing stock to provide 2 or 3 for 1 infill models.
- Creating a Co-designing cohousing such that business and governance structure can then be established.

The Initiative used the innovative 'Alternative Infill' housing model and the international principles of cohousing and applied local co-design with older residents to innovate and adapt to local culture and needs. Exploring what shared amenities were desirable and the spatial budgeting priorities of the older community created a new "cohousing lite" to meet the needs of an urban Australian population. Applying accessibility and livability standards created a new quality of dwelling not currently included in urban planning policy.

The City of Unley (lead partner) provided project management and local planning expertise alongside other local government agencies providing innovative up flow into the public State Planning Commission and Department of Infrastructure who were undertaking a project to consolidate current local planning codes into a single state-wide Policy. Thus, research in action directly affected new policy.

Innovative public-community partnerships supported this by using older residents to co-design cohousing with our partner in design expertise at the University of South Australia.

Primary funding was received from the State Health Agency, Office for

老年居民与南澳大利亚大学的设计专家合作，共同设计共同住宅，体现了创新的公共社区伙伴关系。

项目主要资金来自国家卫生机构、健康养老办公室，并得到各地方议会和运输部的捐款。

牵头议会提供项目支持和管理。所有的地方议会均提供了样板设计地点，以及当前规划审批和流程方面的专业知识。

州议会为新法规的制定提供了相关信息。南澳大利亚大学建筑系高级讲师达米安·马迪根（Damian Madigan）博士提供了具体的设计专业知识。

创新

南澳大利亚从未开发过同等质量、同等价值和无细分的高密度养老公共住宅与填充建筑设计。因此，目前的规划和审批流程无法成功推行该项目。所以，政府从未考虑采用支持建筑发展和居民居住所需的治理结构财政模式。

因此，该项目具有革命性意义，其通过借鉴其他国家的共同住宅原则，试图改造为澳大利亚版本，但该新版本尚未经过证明，无法确认是否对开发商或潜在居民具有价值。

在澳大利亚，由于对这种形式的社会住房缺乏了解，社区居民对共同住房的概念出现了抵制。通过共同设计研讨会，居民们可探索自己愿意与哪些人共享什么样的便利设施，最终形成与澳大利亚文化相适应的新形式共同住宅。

该项目概念规划早期遇到的障碍是：设计成果不符合既定的规划和设计规范。在技术图纸的支持下，通过开发一套完整的设计作品，规划专业人员可考虑这种新立法，允许建造有益的共同住宅。

成效

该项目使人们改变了对共同住宅的态度，并认识到该设计对各年龄阶段的人所带来好处，尤其是对老年人大有裨益。公

Ageing Well, supplemented by contributions from each local council and the Department of Transport.

The lead counsel provided project support and administration. All local councils provided exemplar design sites and professional expertise on current planning approval and process.

The State commission provided input regarding the new Code development. Specific design expertise was provided by Dr. Damian Madigan, Senior Lecturer in Architecture, University of South Australia.

Innovative aspects

Cohousing for ageing-well and infill designs for higher density dwellings of equal quality and value without subdivision have not been undertaken in South Australia before. Therefore, the current planning and approval process cannot support successful applications for this. Consequently, a financial model to support building developments and governance structures required for residents to live in them has never been considered.

This initiative is therefore quite revolutionary as it has borrowed the principles of cohousing from other countries and attempted to create an Australian version, with the risk that this Australian version has no proven value to developers or potential residents yet.

Resistance was encountered in the community to the concept of cohousing based lack of exposure to this form of social housing in Australia. The co-design workshop allowed individuals to explore what individuals and amenities they would feel comfortable to share with resulting in a new form of cohousing suited to the Australian culture.

Conceptual planning obstacles were encountered early on by the design not fitting the established planning and design codes. Developing a full suite of designs supported by technical drawings allowed planning professionals to embrace considering new legislation that could allow such beneficial cohousing to be built.

Desired change or outcome

Achieved a change in attitude towards cohousing and an appreciation of the benefits it can bring to all ages but specifically older individuals. The attitude change was across the public community, local government, and State Australian government departments. A submission to the new State



众、地方政府和州政府各部门的态度都发生了变化。

我们提交了一份新的《州规划和设计法规》提案，旨在促进设计良好且与项目定义的共同住宅原则相一致的填充式建筑。若法案通过，该项目将在州内产生重大影响，并可能引起全国人民的兴趣。

澳大利亚城市正在那些可提供政府、健康、娱乐、商业和市政服务的郊区，为老年人提供更多的多样性填充住房，同时不破坏现有的社区特色。这种现象已被市民广泛讨论（请参考澳大利亚住房和城市研究所）。“共同住宅，安乐晚年”项目是对 AHURI 数据的直接回应，该数据表明，居民希望可以在社区内养老。

该项目开发了独特的“空间预算”共同设计研讨会流程，让老年居民可参与共同住宅概念的设计。根据财政预算，居民得到一张 50 平方米的私人住宅地图和一张 50 平方米的公共空间地图。之后，参与者获得不同尺寸的生活空间（如：大、中或小卧室，大、中或小厨房等）剪纸，并要求他们根据可用空间调整缩小后的生

Planning and Design code to facilitate well-designed infill aligning to the projects defined cohousing principles have been achieved, and if successful will have an initial State-wide significance, likely to raise interest nationally.

Australian cities are struggling with the challenge of providing increased infill housing numbers and diversity for older people in suburbs well-connected to government, health, recreational, commercial, and civic services, without the destruction of existing neighborhood character. This phenomenon has been widely described (refer to Australian Housing and Urban Research Institute). The Cohousing for Ageing Well project is a direct response to AHURI's data, which indicates that housing options that allow residents to age within their community are desired by residents.

The project developed a unique 'spatial budgeting' co-design workshop process to engage older residents in its conceptualization. Mirroring a financial budgeting exercise, residents were given a map with 50m² for a private dwelling and another 50m² for communal space. Participants were then given cut-outs of living spaces of various sizes (e.g., large, medium or small bedroom, large, medium or small kitchen, etc) and were tasked with choosing how they would tailor their downsized living spaces based on the available space.

Real-life dwellings were used as exemplars for the redesign process. Older residents from the four local council areas took part in an interactive



活空间。

该项目把真实生活中的住宅用作重新设计过程的范例。来自四个地方议会地区的老年居民参加了一个互动研讨会，想象自己与他人共居生活，确定各自能共居共享的程度，以及什么因素会成为共居的障碍，或什么情况会导致双方拒绝共居生活。设计草案是为了举例说明两种不同场地大小的共同住宅模型，居民根据自己的需求决定空间预算和优选项。

是的，该项目的重点对象是居住在南澳大利亚大城市的老年社区人群，他们希望留在自己的社区养老，但由于他们的物质或经济需求发生了改变，因此需要缩小居住规模。

根据最新的人口普查数据，安利市 22.6% 的人口年龄在 60 岁以上。

随着南澳大利亚人口老龄化速度超过澳大利亚其他地区，预计这一趋势还会继续增长。到 2031 年，60 岁以上的人口将超过南澳大利亚总人口的 1/5。

措施

在规划和设计法规中纳入该项目的成

workshop where they were tasked with individually identifying the degrees of sharing they could imagine living with, and those that would be barriers or outright 'deal breakers'. Draft designs were prepared to illustrate for example cohousing models for two different site sizes and residents determined the spatial budgeting and priorities for their needs.

Yes, it focuses upon older community-dwelling adults in metropolitan South Australia who wish to stay in their communities yet need to downsize their property because their physical or financial needs have altered.

From the latest census data, 22.6% of the City of Unley's population is aged 60 and above.

This trend is predicted to increase, with the South Australian population ageing faster than the rest of Australia. By 2031, there will be more than 1 in 5 of South Australia's total population.

Measures to sustain innovation

Embedding outcomes in the planning and design regulations will enable cohousing to pass local planning approvals in the future. Ongoing work is planned to create design guides for architects, training for local planners in the assessment of cohousing designs and governance structures for residents to ensure successful site redevelopment long term.

Learning aspects

果将使共同住宅能在未来通过地方规划审批。该项目目前的工作包括为建筑师制定设计指南，培训当地规划师评估共同住宅设计和居民治理结构，以确保长期的地方重建得以顺利进行。

经验

该项目可共享的经验包括：公共及社区跨区域合作的好处、跨学科专家的价值以及老年居民对设计过程的重要见解。

通过把各方聚集在一起，建立了共同住宅新概念，颠覆了公众对共享空间的刻板印象，并满足了社区的文化期望，与海外建立一致的原则，且满足了地方议会和州规划进程的务实要求。大学专家的参与确保了设计的严谨性，与建筑师合作也提高了项目创造性，挑战通常为老年人设计的住宅。

我们很乐意分享设计报告、提交至当地规划和设计规范的文件以及共同设计研讨会的方法，让其他城市也可与居民合作，探索新的共同住宅选择。

Shared learning includes the benefit of the cross public community partnership, the value of cross-disciplinary experts, and the vital insights of the older residents to the design process.

By bringing all the parties together a new concept of cohousing was established which challenged public stereotypes about sharing space, met the cultural expectations of the community, aligned with the principles as established overseas, and met the pragmatic requirements of both local council and State planning process. Rigor was ensured by the involvement of university experts and creativity was boosted by engaging with architects that could challenge the dwellings usually designed for older adults.

We are happy to share the design report and submission documents to our local Planning and Design code along with the methodology for the co-design workshop so that other cities can engage with their residents to explore new cohousing options

项目与可持续发展目标和《新城市议程》的相关性

(1) 可持续发展目标

- ◆ 目标 10: 减少国家内部和国家之间的不平等
- ◆ 目标 16: 创建和平、包容的社会以促进可持续发展，让所有人都能诉诸司法，在各级建立有效、可问责和包容的机构

(2) 《新城市议程》

为所有市民提供基本生活服务
确保所有公民机会均等且不受歧视

Relevance of the initiative to the Sustainable Development Goals and the New Urban Agenda

(1) Sustainable Development Goals

- ◆ Goal 10: Reduce inequality within and among countries
- ◆ Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions for all

(2) New Urban Agenda

Provide basic services for all citizens
Ensure that all citizens have access to equal opportunities and face no discrimination

