



联合国开发计划署

全球环境基金小额赠款计划

乡村节能行动——土炕吊起来

United Nations Development Programme

Global Environment Facility/Small Grants Programme (GEF/SGP)

Energy-saving Hypocaust Transformation in Rural Area



Project Background

Energy-saving, emission reduction and creating a low-carbon life is the theme of the world development today. With the intensification of global warming, the people of all over the world have reached the consensus to reduce the emission of greenhouse gas, develop low carbon economy and fight against global warming.

Yuncheng City of Shanxi Province is located in the north of China, where ecological environment is vulnerable, water shortage is severe and climate change is sensitive. Shanxi is one of the most environmental fragile areas threatened by climate change. The climate in this area is harsh, which is known as hot in summer and cold in winter. Shanxi Province is the big 'energy province' and 'coal province' in China. The economy of this province mainly depends on fossil fuels, which has generated environmental problems such as intensification of air pollution, the shortage of groundwater and drinking water. Environmental protection cannot be delayed even a moment.

Kang (or the hypocaust) is the essential household facility at local rural area for cooking and heating from generation to generation. The traditional Kang is based on the floor, and most of the heat is absorbed by the floor, which causes large consumption of firewood, incomplete combustion, high emission and severe air pollution. Comparing with the traditional Kang, Diao Kang (or energy-saving hypocaust) features with fast warming, balanced heating on the surface, strong thermal storage and heat preservation abilities etc. which can improve thermal efficiency from 45 percent to 70 percent or more. It is estimated that each energy-saving hypocaust can save 40 percent of firewood. It can save 1382kg straw stalk or 1210kg firewood each year, equal to 691 tons of coals. This can reduce 1.7 tons of CO2 emission.

Introduction of Project Area

Project demonstration area is located in Senglou Village of Hejin County, Yuncheng City, Shanxi Province. It is 100 kilometers away from Yuncheng City. The project target population is 150 households of villagers in 4 villages with mostly Han people. The project site covers 75.2 km2. The crops and economic trees are mainly corn, wheat, persimmon and peach etc.

Problems

1. The traditional hypocaust has obvious drawbacks such as high energy consumption, low heat efficiency and energy sources waste.
2. The energy saving and environment-friendly hypocaust is not known by the local villagers.
3. The villagers are lack of environmental protection awareness, energy saving technology and climate change knowledge.

Project content

Project Objectives

1. Reduce coal consumption and CO2 emission at project site
2. Enhance villagers' awareness of energy-saving, emission reduction and climate change

Project activities

- Publicize the knowledge of afforestation and increasing carbon credit and organize villagers to plant trees.
- Remove the traditional hypocaust and construct 150 energy-saving hypocausts for target households.
- Organize trainings on energy-saving hypocaust construction skill and climate change mitigation
- Collect environmental protection slogans and organize local opera competition to publicize environmental protection knowledge

Project outputs/outcomes

1. Energy-saving hypocausts are constructed for 150 target households, which can reduce 1,723kg carbon dioxide emission.
2. 1000 villagers have the knowledge of climate change and energy saving.
3. Local media and public pay more attention on climate change issues.



Residents' traditional Kang



Ready to transform



Building process



Completed energy-saving hypocaust

Project organization

The GEF Small Grants Programme

As a corporate programme funded by the Global Environment Facility (GEF), Small Grants Programme was established in 1992, implemented by the United Nations Development Programme (UNDP) on behalf of the GEF partnership, and executed by the United Nations Office for Project Services (UNOPS). SGP channels financial and technical support directly to NGOs and CBOs for activities that conserve and restore the environment while enhancing people's well-being and livelihoods. SGP supports activities in these priorities - biodiversity conservation, abatement of climate change, protection of international waters, prevention of land degradation and elimination of persistent organic pollutants. With presence in 122 countries, SGP has awarded more than 12,000 grants worldwide.

UNDP

UNDP is the UN's global development network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. We are on the ground in 166 countries, working with them on their own solutions to global and national development challenges. As they develop local capacity, they draw on the people of UNDP and our wide range of partners.

In China, UNDP fosters human development to empower women and men to build better lives. As the UN's development network, UNDP draws on a world of experience to assist China in developing its own solutions to the country's development challenges. Through partnerships and innovation, UNDP works to achieve the Millennium Development Goals and an equitable Xiao Kang society by reducing poverty, strengthening rule of the law, promoting environmental sustainability, and fighting HIV/AIDS.

Yuncheng Volunteers Federation

Established in August 2007, the Yuncheng Volunteers Federation is a non-profit civil society organization registered with Civil Affair Department in China. Its members come from local government agencies, universities, academic institutes and other sectors. They are warm hearted people who voluntary contribute their time, energy, knowledge and expertise without pay and devote themselves to serving the society and helping the vulnerable group. The Yucheng Volunteers Federation composes 9 working groups including disabled people assist, environmental protection, blood donation, education assist, HIV/AIDS prevention, tobacco control and so on. There are two types of members, group volunteers and individual volunteers, who provide voluntary services to the society during weekend and holidays all year long. Since it was founded, the volunteers of Yucheng Volunteers Federation have contributed around 30,000 hours of voluntary services to the society and endeavor to build a platform for voluntary services. Its slogan is: the fragrance always stays in the hands that gives the rose; help others and make yourself happy.

项目背景

节能减排，创造美好低碳生活是当今世界发展的主题。随着全球气候变暖趋势的进一步加剧，减少温室气体排放，大力实施低碳经济遏制全球气候变暖成为世界各国人民的共识。

山西运城地区位于生态环境脆弱、资源型重度缺水、对全球气候变化敏感的华北地区，是气候变化威胁下环境极其脆弱地区之一，这里气候条件相对较差，冬冷夏天热。山西是中国的煤炭大省和资源大省，全省经济以化石燃料为支撑，造成空气污染加剧，地下水短缺，饮水一度出现困难等问题，拯救环境已经到了刻不容缓的时刻。

土炕是当地农村沿袭千年的冬季取暖、做饭设备。传统土炕都是落地式的，烧炕的热量大都被地面吸收了，烧柴量大，燃烧不充分，排放量大，对空气造成严重污染，大量柴源的砍伐和乱堆放破坏生态和环境。与传统旧式灶炕相比，吊炕具有升温快、炕面温度均衡、蓄热保温能力强等特点，综合热效率由原来的45%左右提高到70%以上。据推算，每部吊炕可节柴40%左右，全年可节约1382公斤秸秆或1210公斤薪材，相当于少用691公斤煤，减少二氧化碳排放1.7吨。



www.maptown.cn/China/Map/OTISNwTrAvE/index.html

项目内容

项目区介绍

项目示范区概况

项目示范区位于山西省运城市河津县僧楼乡，距离运城市100公里，项目目标人群为僧楼乡4个自然村中的150户村民全部是汉族。僧楼乡面积75.2平方千米，农作物和经济树种主要有玉米、小麦、柿子树、桃树等。



面临的问题

1. 传统土炕存在高能耗，热效率低，和浪费能源等缺点。
2. 当地村民对节能和环境友好型的吊炕认识不足。
3. 当地村民环保意识较弱，缺乏节能和气候变化方面的技术和知识。

项目目标

- 项目点村民的用煤量减少，二氧化碳排放量减少
- 项目点村民节能减排和气候变化的意识提高

项目活动内容

- 开展植树造林、增加碳汇知识宣传并组织村民植树
- 为示范户改造150铺节能炕
- 开展建炕技术培训及减缓气候变化知识培训
- 组织环保标语口号征集、开展干板腔宣传环保比赛

项目机构

项目成果

- 150个示范家庭获得节能炕改造，每年减少1723公斤二氧化碳排放。
- 1000名村民获得气候变化和节能的知识。
- 当地媒体和公众更加关注气候变化问题。



村民旧炕



准备改炕



修炕过程



新炕完成



宣传志愿者出发前夕



露天干板腔表演

全球环境基金小额赠款计划

作为全球环境基金资助项目的组成部分之一，小额赠款计划成立于1992年，由联合国开发计划署负责实施，联合国项目管理办公室负责执行。小额赠款计划直接向非政府组织和社区组织提供资金和技术，支持他们保护和恢复自然，同时提高人们福祉和生计的活动。小额赠款计划支持的优先领域为：保护生物多样性、减轻气候变化、保护国际水域、防止土地退化和减少持久性有机污染物排放。目前，这个计划已经在全球122个国家支持12000多个项目。

联合国开发计划署(UNDP)

联合国开发计划署是联合国从事发展的全球网络，我们倡导变革并为各国提供知识、经验和资源，帮助人民创造更美好的生活。我们在166个国家开展发展援助，通过与这些国家的合作，帮助各国应对全球和各国国内面临的发展挑战。联合国开发计划署及其广泛的合作伙伴一起帮助各国进行自身的能力建设。

在中国，联合国开发计划署致力于促进人类发展，赋予女性和男性平等的权利，共同创造更美好的生活。作为联合国的发展机构，联合国开发计划署利用其丰富的国际经验，帮助中国寻求应对发展挑战的解决之道。通过建立伙伴关系和不断创新，联合国开发计划署在中国注重消减贫困、加强法治，促进环境的可持续性以及防治艾滋病，为实现千年发展目标和公平的小康社会而不懈努力。

运城市义工联合会

运城市义工联合会成立于2007年8月，是一家民政注册的民间非盈利性公益组织，有分别来自运城各机关单位，运城大学、山西水利学院等学校和各区县的社会各界会员。由志愿奉献自己的时间和精力、学识、技能，不为物质回报，致力于服务社会和帮助弱势群体的社会各界爱心人士组成。计有助残、助老、环保、血液捐赠、助学、防艾、禁烟等公益宣传、助学、技能义工服务组、社区服务等9大服务组，会员分为团体义工和个人义工两部分，利用休息日和节假日为社会提供义务服务，全年无停歇。成立至今，为社会义务服务时间近三万小时。尽心竭力搭建一个志愿服务的平台，口号：予人玫瑰，手有余香！帮助别人，快乐自己！