

World Vision
Ethiopia

EASING WOMEN'S LIFE

WITH ENERGY EFFICIENT COOK STOVE



Foreword

World Vision's focus on climate change is centered on the need to enrich livelihoods through improved household food security, and enhanced responsiveness, resilience and recovery to natural disasters that plague household agricultural productivity and production. Through a focus on the restoration of degraded areas, and reducing a pressure on the existing biomass World Vision has brought together promotion of efficient technology to improve access to clean cooking and a technique known as Farmer Managed Natural Regeneration (FMNR) that promotes sustainable natural resource conservation, increased agricultural productivity, income generation and improve women and children health.

In relation to introducing efficient technology to improve access to clean cooking, World Vision Ethiopia to date has disseminated more than 98,340 improved cook stove. With this, the project has impacted 49,170 households organizing them in to more than 290 cooperatives which laid a good ground for sustainable management of the intervention with enhanced ownership with in the community. Moreover the project has benefited 44,401 women and 116,548 children reducing the work load and time spent for fuel wood collection and created a healthier, safe and clean cooking environment. The project has also significant contribution in reducing emission of greenhouse gas and pressure on the natural woody biomass. WVE has prepared a business model to scale up the intervention to the unreached part of the community within the project operation area using the existing structure and cooperative model.

World Vision Ethiopia

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WORLD VISION ETHIOPIA

Our vision for every child,
life in all its fullness;
our prayer for every heart,
the will to make it so.

Contributing to the
wellbeing of more than 3.5
million Vulnerable Children
in the five years national
strategy from 2015-2020.



- We are Christian
- We are committed to the poor
- We value people
- We are stewards
- We are partners
- We are responsive



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QUICK FACTS

The consumption of fossil fuels and deforestation is causing a severe climate change in our globe. According to WHO:

About 7 billion tons of carbon is released annually into the atmosphere from the burning of fossil fuels and deforestation.

In 2012, household air pollution was responsible for 4.3 million deaths, and 7.7% of the global mortality.

The severity of the issue has brought about the world's influential leaders and the top executives of the climate change together to deliberate on ways and means to reduce global warming though the meeting ended without meaningful consensus.

Deforestation and forest degradation account for an estimated 17 percent of global GHG emissions.

Around 3 billion people cook and heat their homes using solid fuels (i.e. wood, charcoal, coal, dung, crop wastes) on open fires or traditional stoves.

(IPCC (2007))
Climate
change 2007:
synthesis report.
Contribution of
working groups I,
II and III.



IMPACT OF DEFORESTATION FOR FUEL WOOD IN ETHIOPIA

Ethiopia has been adversely affected by deforestation. Households in rural and urban areas depend on solid biomass fuels for their cooking and baking activities. The heavy reliance on wood for cooking not only increases deforestation but also causes health issues among the users.

Solid biomass is used by 99% of rural and 84% of urban households for cooking and baking.¹

The amount of wood consumed for cooking is estimated at 76.5 million ton plus charcoal that is interpreted as fuel wood equivalent of 28.6 million tons annually².

A typical household spends 500 hours annually on fuel wood collection.³

According to WHO⁴ indoor air pollution is responsible for approximately 4.9% of total burden of disease among all age groups in Ethiopia.

Excessive exposure to smoke due to burning of dry biomass for cooking is one cause of respiratory disease which is responsible for up to 12% of deaths in Ethiopia.

¹ (CSA,WMS, 2012 statistical report for 2011, vol.2)

² (Biomass Energy strategy (BEST) – December 2013)

³ (ESMAD-Biomass Energy Report Final)

⁴ (WHO: Department of measurement and Health information, December 2004)

ENERGY EFFICIENT COOK STOVE PROJECT

In a bid to minimize the adverse effect of deforestation, World Vision Ethiopia funded by World Vision Australia and Standard Bank PLC, introduced in 2013, energy efficient cooking stove projects in 10 districts of Oromia Region and in 2 districts of South Nations Nationalities People Region. In these areas, alternative sources are either simply unavailable or unaffordable for more than 90% of the consumers.

These households used open fire to cook their food, meaning they used more firewood hence increasing deforestation. Additionally, approximately 81% of all wood used by households is also classified as non-renewable, leading to increased deforestation within Ethiopia.

The project aims to reduce reliance on wood fuel among participating households by providing clean technologies (energy saving Injera (Mirte) and Non injera (Tikikil) improved stoves) across the 12 districts which will contribute for improved health and economic conditions. The improved cook stoves have brought about a number of significant economic, health, environmental, livelihood benefits to the beneficiaries







“I can now send my children to school”

Hajira Usmael, a 45 year old mother of 7, is one of Energy efficient cook stove members who received Mirt and tikile stoves and is enjoying the benefits. As a member of the cook stove association, she was able to access a loan and start a business selling goats. “I was a housewife and depended on my husband’s subsistence farming that provided little income to meet our needs. I borrowed some money from our cook stove association and started a business.,I sell goats and earn from 1600 Birr (80 USD) to 2000 Birr (100 USD) a month. I can now feed our children and send them to school. As a woman, it also helped me meet my personal needs that were difficult to share with my husband.”

1

Community Capacity and asset building

- More than 50,000 peoples have been trained on cooperative development and improved cook stoves.
- 290 cooperatives (with a member of 49,170 (44,401 women 90.3% and 4,769 men (9.7%)) were formed.
- A culture of saving and increased financial ability especially for women and members of the cooperatives
- 2,473 women got access to credit from their savings in the past two years. A total of 1,546,984 birr (81,420.21 USD) was disbursed as loans to members.
- 13 women per cooperative were able to take leadership positions in the associations and this created & strengthened their leadership capabilities.
- 25 Mirte stove producers cooperatives were organized, legalized and the cooperative sold 49,170 Mirte,
- The Mirte Cooperative provided employment opportunity for more than 300 people and built asset in these groups.
- 49,170 Tikikil and 49,170 Mirt stoves were purchased and distributed.

2

Reduction in indoor air pollution

Using open fire in the house creates indoor air pollution which can cause severe respiratory diseases, especially in children and mothers who spend the most time around such stoves. It is estimated to cause approximately 2 million premature deaths mostly in developing countries. Almost half of these deaths are due to pneumonia in children under 5 years of age. 49, 170 households were provided with access to clean cooking which contributed to a reduction in indoor air pollution.





“cook stove has reduced my challenges”

Fatuma Ismael, is a 50 year old, mother of two children living in Jeju District. She cooked food for her family using firewood and visited the forest at least four times a week. The smoke from the traditional cook stove was dense and irritated her eyes. It also made her clothes dirty and smell like smoke.

“The challenges of using the traditional cook stove were many. It irritated my eyes and I experienced discomfort in my chest. The energy efficient fuel saving cook stove has reduced my challenges in cooking. The smoke is significantly reduced. My health has improved. I am happy.” she gladly explains.



“I now have more time and energy”

Amelmal Taye, is a 38 year old mother of five. Before, World Vision introduced the energy efficient cook stove project in the area, she used an open fire stove. “I went to the forest every day to collect firewood. It took me 6 to 8 hours. I was so tired that I had trouble doing anything else afterwards. The energy efficient cook stove that WV introduced saves energy so much. Since I began using the energy efficient stove, I visit the forest only once a week. It has helped me save time and energy. I now have time to run a small business. This has helped me to improve our way of life. I am grateful.”

3

Environmental benefit (Reduce deforestation & pressure on biomass)

- The energy efficient cook stove reduced the amount of fuel wood consumption of beneficiary households by 46.98% to 52.94%.
- Reduced the frequency of travel of households especially women and children to collect fuel wood.
- Minimized work load and expense to be incurred by households to purchase fuel wood.
- May reduce deforestation which in turn contribute to decreased soil erosion and increase soil fertility.
- May increase soil fertility directly contributes to productivity and production that will have a direct relation with house hold food security.

“My Injera is tasty!”

Rabiya Mume is a 40 year old mother of seven living in Tulo District. She used the traditional open fire stove for years with all its challenges. “The traditional stove was not fixed at one place. Every time I made Injera, I had to put the stove on the three stone and then take it away when I was done. The stove is clay and it easily breaks when I move from one place to another. I had to buy a stove at least four times a year and the lid once a month. The World Vision stove is fixed at one place. It has been two years since I took it and it hasn't broken. Also the Injera made on traditional stove tasted like smoke and the edges were burnt, but the Injera made on this stove is very tasty and the edge is clean because it is not exposed to fire.”



Loan and credit service

Dibabish Bogale is a 39 year old mother of 6 children living in Jeju District. She is a member of the energy efficient cook stove association. As a member of the cooperative, she has benefited from saving and credit services and used it to run various profitable business. She says, "I took a loan two rounds ago and repaid it successfully. With the first loan, I bought onion seed and planted it. I gathered a huge harvest. Selling the onion, I bought a plot of land in a town to construct a house for rent. With the second loan, I bought teff and fertilizer and I am hoping for a good harvest. Additionally, I am running a small business. This has helped me to feed, educate and afford healthcare services for my children."

4

Economic benefit

- Cooperatives have a total of more than 10 million birr (500,000 USD) capital without including their fixed assets that is under investment on sustainable community based food security activities (projects) and can also be used as a revolving fund providing credit for their members.
- The project also anticipates carbon revenue from sale of 660,000 ton of CO₂, which is currently under discussion. This will contribute enormously to the financial strength of the cooperatives and members.
- 1,411 cooperative members received 136,563 birr (7,187.53 USD) from their dividend share. The average Household fuel wood consumption has decreased from 12.3 to 5.6 kg in a day
- The amount of fuel wood previously consumed in two days by the open fire is currently used for 6.5 days or a week
- The money used to buy fuel wood was saved to cover other part of household expense
- Households invest the time that was previously used for fuel wood collection invested on other types of household livelihood option.
- Cost of flat dish (Mitad) purchase (which households purchased more than three times in a year) has significantly reduced. Since they started using the stove by placing the plate on the stove, it is safe and also reduces risk of breakage.
- Reduced the burning of the lid "akimbalo" due to flame, this in turn also reduce the cost incurred for its replacement.
- Reduced risk of fire hazard after making injera as the newly cook stove is fixed.



Improved Education for Children

Seifedin Kassim is a 14 year old boy living in Digeluna Tijo District. He is in grade 4. Before World Vision introduced the energy efficient cook stove, he had to collect fuel wood every day for his family and this was affecting his school performance. "Before I had to collect firewood and cow dung at least two hours a day for my family. I did not have time to study. I do not have adequate time to do my assignments and homework and it was affecting my school performance." After the introduction of energy efficient cooking stove by World Vision, things have changed for him for better. "Now I collect fuel wood only once a week on Saturday. I have enough time to do my assignments and study. I even have time to play with my friends. My school performance has improved. I am now first place in my class." He happily explains.

5

Improvement of household livelihood options and children's educational performance as a result of reduced work load on children and women

- The duty of fetching fuel wood reduced from 21 hours a week to nearly 6.5 hours a week
- Women use the time that they were wasting to collect firewood for other livelihood option of the household.
- Children reduced absenteeism from school and engaged in studying which contributed to improved their school performance.



Government staff witness about deforestation reduction

Hordofa Beyene, 28, is the head of Tulo District Water, Energy and Mineral Bureau. In collaboration with World Vision, he oversees the distribution and production of the cook stoves. "Before World Vision introduced energy efficient cook stoves, people were entirely dependent on the forest for fuel for cooking and they were a lot of deforestation. This caused soil erosion and loss of soil fertility. After the introduction of the energy efficient cook stove, things have improved. The magnitude of deforestation has decreased by more than 60% and in turn the soil erosion and has increased soil fertility, production and productivity. We are grateful to World Vision."

6

Reduced greenhouse gases emission to the atmosphere

- Efficient energy cooking stove Project reduced emission of 2.32 ton of CO₂ per year per household.
- In the past two years (2014 & 2015), the project reduced emission of a total of approximately 95,055 tons of CO₂ emission to the atmosphere which contributed to the national climate resilience green economy strategy and global efforts to combat climate change.
- The project is expected to reduce emission of 660,000 ton of CO₂ until 2022.





Clean Cooking

As the improved cook stove is closed in all its perimeter except the hole that could be used to insert additional wood for cooking and inlet of oxygen this helped clean cooking that is free of ash and dust that could spoil the cooked food. It has also helped women to keep themselves very clean during and after cooking. In some places the beneficiaries gave their feedback as they have changed the name of the improved cook stove by saying "Sumsuma jalala" which means "cook stove of Love". The reason is women can cook without wearing their kitchen close keeping them-selves very clean hence this helped more attraction of their husbands than ever seen in the lives of rural households, which was mentioned to contribute to the reduction of family disintegration and polygamy.



Improved leadership

Rena Ademe, is Hoji Murtefeda Energy Efficient Cook Stove User Cooperatives Chairperson. Before World Vision intervention in cook stove, she was leading 16 members of the credit and saving cook stoves cooperatives without any financial and management knowledge. Consequently, the association was unproductive and some members left the association. "We were providing credit services to customers without examining the profitability of the customers' business proposal. We also had poor book keeping habits and there was time when we forgot to recover the money we loaned to customers. After World Vision trained us on book-keeping,

financial management, credit and saving loan services, expenditure and business planning, our leadership skills have greatly improved. We critically examine the profitability of the proposed business plan before we provide loan services. We also regularly monitor our members businesses, provide consultancy services, and help them to come up with strategies to enable them repay the loan on time. Now our association members have increased from 16 to 200. I am now confident that I am able to lead any business association hereafter. I have also disproved the myth that women cannot take up leadership positions.





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