



## THE CHALLENGE/ISSUE

Brick production is an important area where substantial emission reductions can be made for black carbon and other short-lived climate pollutants (SLCPs). Recent studies show that implementing more efficient technologies, mainly during the firing of bricks, can result in reductions of pollutant emissions from 10 to 50%, depending on the process, scale and fuel used.

**MOST GLOBAL BRICK PRODUCTION TAKES PLACE IN ASIA.**



There are approximately 100,000 large-scale kilns with fixed chimneys, circa 1,900 operating in India and 6,000 in Bangladesh. Latin America also has a considerable number of brick production facilities, including 6,898 in Brazil, 300 in Chile, 2,453 in Colombia, 17,000 in Mexico and 2,222 in Peru.

The brick-making sector is characterized by low energy efficiency, poverty and producers operating in an informal sector, who are barely covered in social, economic or environmental public policies. These factors are powerful drivers in suppressing change. What is needed are strategies to engage small producers and to formalize the sector through public policies. Special attention also needs to be given to demonstrating health and livelihood impacts to transform the sector. Technology upgrades will go hand in hand with increased access to modern energy sources. In the sense of a holistic mitigation strategy, considerations will go beyond improving the bricks production processes towards considering building materials more broadly (e.g. use of hollow bricks etc.).

# CCAC

**INITIATIVE**

MITIGATING BLACK CARBON  
AND OTHER POLLUTANTS  
FROM BRICK PRODUCTION

## WHAT THE INITIATIVE IS DOING

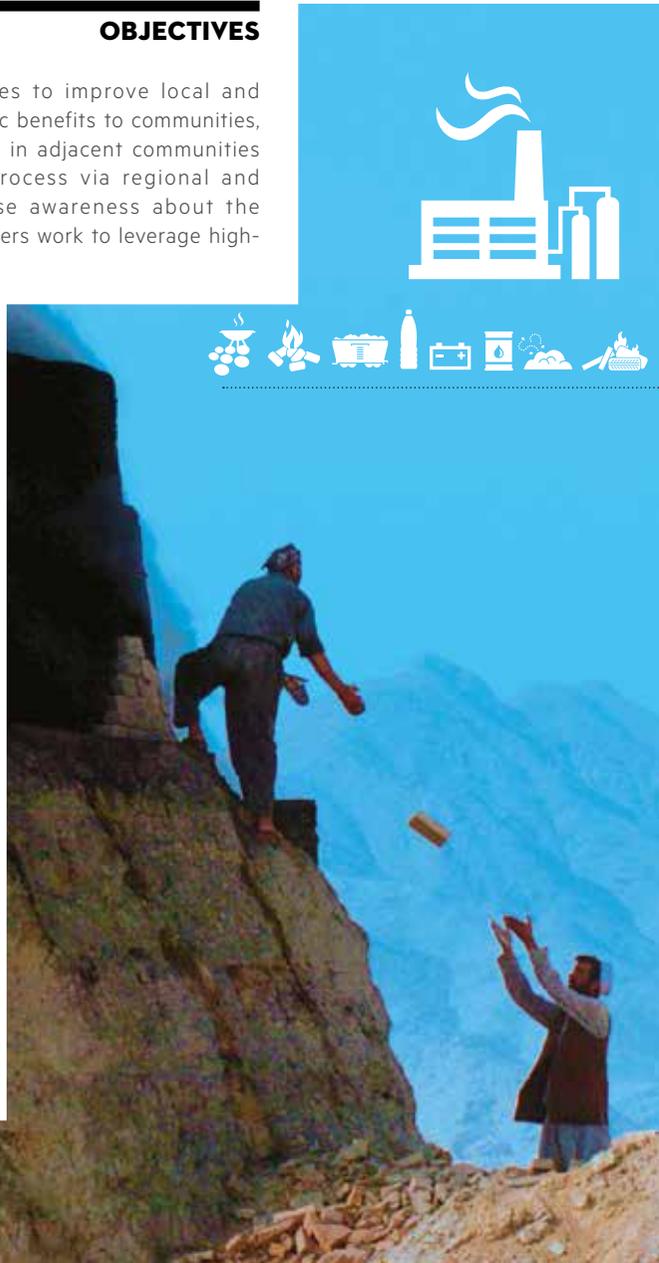
The Brick Production initiative aims to catalyze political engagement by elevating the importance of reducing SLCPs from inefficient brick production onto national governments' agendas.

## OBJECTIVES

There are significant opportunities to improve local and regional air quality, provide economic benefits to communities, and reduce adverse health impacts in adjacent communities by improving brick production process via regional and international coordination to raise awareness about the importance of this issue. CCAC partners work to leverage high-level political will in Latin America and the Caribbean, Asia and Africa to identify possibilities for brick kiln mitigation and establish a mechanism to share information. Change will require transfer of knowledge from countries that have transitioned to modern brick production, and it is critical to tackle this complex issue from a cross-sectoral and inter-agency perspective.

To achieve its objectives, the CCAC Brick Production initiative is working on:

- developing and establishing of global expert groups to consolidate the state of knowledge on science, technology, and policy,
- training to build capacity of key actors on technology adoption,
- support of governments on development and implementation of comprehensive policies to modernize the sector,
- information development and dissemination.



## FACTS AND FIGURES

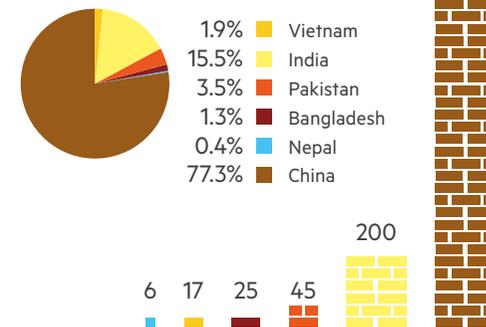
1,500 billion bricks are produced every year ›  
1 billion of those are produced in China  
Biggest brick producers in Asia are:



China, India, Pakistan, Vietnam, Bangladesh and Nepal (altogether Asia produces almost 90% of global produce).

Unconventional fuels burned in brick kilns:  
Coal, wood, local biomass, waste oil, used tires  
sawdust, plastics, battery cases, dung

### BRICK PRODUCTION - ASIA



### BILLION BRICKS/YEAR

Latin America has a large number of brick production facilities, from an estimated 300 in Chile, to between 8 and 10 thousand in Peru and approximately 17,000 in Mexico. Recent studies show that implementing more efficient technologies, mainly during the firing of bricks, can result in reductions of pollutant emissions from 10 to 50%, depending on the process, scale and fuel used.

According to EELA low technology level is widely spread in the region, which can also be reflected

in the low levels of kiln capacities and production; with the exception of Brazil and Colombia that have production areas with semi-automatized technology and more efficient kilns, Brazil leading the region. Peru and Bolivia have a mixture of clusters where some of them have implemented improved technologies and others still use manual production processes (see table below).

COUNTRY	AVERAGE ANNUAL PRODUCTION (THOUSANDS BRICKS)
Argentina	143.5
Bolivia	84 – 1782,7
Brazil	5.379,9
Colombia	194,9 – 11.040
Ecuador	45,2 – 207,5
Honduras	34,5 – 241,5
Mexico	57,0 – 7.500,0
Nicaragua	29,1 – 310,6
Peru	100,0 – 1.115,0

Low technological levels are highly related with pollutant air emissions; brick production contributes with GHG and BC emissions, with a significant impact on human health and climate change.

## LOCATION OF ACTIVITIES

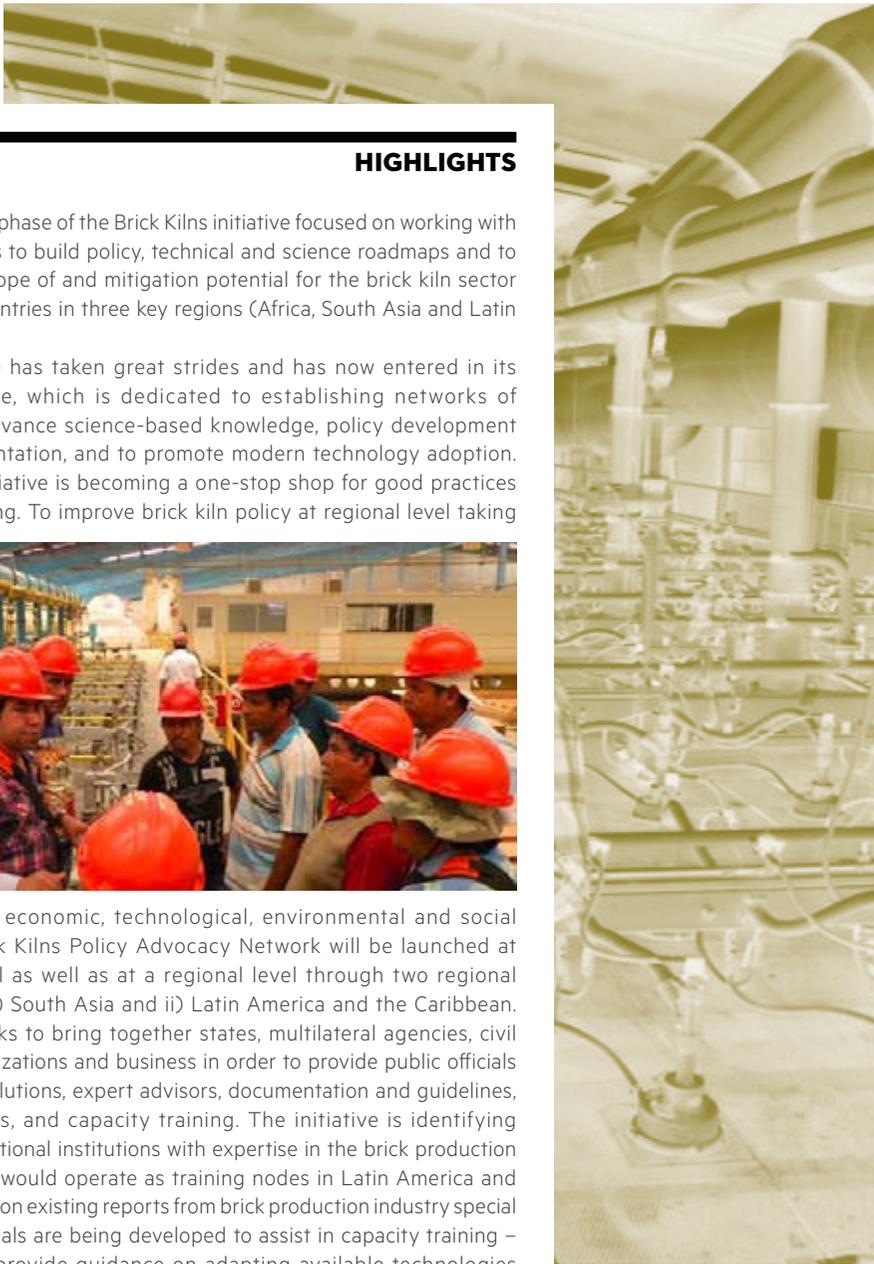
**Latin America:** Brazil, Chile, Colombia, Mexico and Peru

**South Asia:** Bangladesh, Nepal, Pakistan and India

**Africa:** Nigeria and Morocco

**Policy and advocacy network:** global





## HIGHLIGHTS

The fast start phase of the Brick Kilns initiative focused on working with expert groups to build policy, technical and science roadmaps and to assess the scope of and mitigation potential for the brick kiln sector in various countries in three key regions (Africa, South Asia and Latin America).

The initiative has taken great strides and has now entered in its second phase, which is dedicated to establishing networks of experts to advance science-based knowledge, policy development and implementation, and to promote modern technology adoption. Thus, the initiative is becoming a one-stop shop for good practices in brick making. To improve brick kiln policy at regional level taking



into account economic, technological, environmental and social aspects, Brick Kilns Policy Advocacy Network will be launched at a global level as well as at a regional level through two regional networks in i) South Asia and ii) Latin America and the Caribbean. The PAN seeks to bring together states, multilateral agencies, civil society organizations and business in order to provide public officials with policy solutions, expert advisors, documentation and guidelines, best practices, and capacity training. The initiative is identifying specialized national institutions with expertise in the brick production industry that would operate as training nodes in Latin America and Asia. Building on existing reports from brick production industry special training manuals are being developed to assist in capacity training – designed to provide guidance on adapting available technologies for emissions control in brick kilns, including effective policies, brick kiln design, SLCP emissions measurements, and a collection of existing training materials. Various outreach materials and assessment tools have also been developed as part of the initiative to raise awareness and provide information about environmental and health impacts of brick production in Asia and Latin America to facilitate modernization of the sector.

## INSIGHT STORY

In early 2014 the Government of Bangladesh gave its brick kiln owners an ultimatum: Convert to clean, modern technologies for brick production by July or face tough legal action. Bangladesh, black carbon from the nearly 7,000 kilns in the country was hurting pollination for the vast mango crop in the north, as well as the rice crop. It was harming human health. And it contributed to the climate change that has been raising average temperatures in the country, particularly over the last two decades. Kilns in Bangladesh produce some 20 billion bricks every year, but about 4,000 of the kilns used old and polluting technologies, and almost all used coal as a fuel. Bangladesh's stand against pollution from the brick kiln industry began with the personal commitment of one of the co-authors of this story, Anwar Hossain Manju, to do something about the problem.

He saw first-hand how pollution was clogging the air and harming people's health and couldn't let this stand. Lena Ek, the other co-author, who is from Sweden, has initiated a black carbon inventory through the Nordic Council to determine where black carbon emissions need to be reduced in all five Nordic countries. Both Sweden and Bangladesh were founding partners of the global phenomenon, the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants.

With some grumbling from kiln owners, but also with the help of a \$50 million fund provided by the government along with the Asian Development Bank, the World Bank, and the UN Development Programme, modernization of the Bangladesh brick sector is on track. And it illustrates an encouraging trend: Countries are finally beginning to get control of the problem of short-lived climate pollutants.

“ Bangladesh wants to lead the way in modernizing the brick industry, and we are taking our first major steps in this direction. The Government of Bangladesh has given its brick kiln owners an ultimatum: Convert to clean, modern technologies for brick production by July 2014 or face stringent legal actions. ”

Sultan Ahmed, Bangladesh

## ABOUT THE CCAC

The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) is a voluntary global partnership of governments, intergovernmental organizations, business, scientific institutions and civil society committed to catalysing concrete, substantial action to reduce SLCPs (including methane, black carbon and many hydrofluorocarbons). The Coalition works through collaborative initiatives to raise awareness, mobilize resources and lead transformative actions in key emitting sectors.



CCAC SECRETARIAT hosted by the United Nations Environment Programme

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