

Final Report

Workshop for Policy Advocacy Network for Latin America For Clean Brick Production

[Also available in Spanish; Original: English]

May 2015



Date held: April 27&28, 2015

Place held: Maule, Chile

Attendants: 60 (approximate)

Report date: May 6, 2015*

Report Preparer: Center for Human Rights and Environment (CEDHA)

Contact: Jorge Daniel Taillant
jdtailant@gmail.com

+1 415 713 2309



Author:



Center for Human Rights and Environment (CHRE)
www.center-hre.org
contact:

Jorge Daniel Taillant
jdtailant@gmail.com



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Context.

This report complies with the Deliverables points (2.2) and (3), (original date for deliverables: February 28th, and March 30, 2015*) of the contract between The Center for Human Rights and Environment (CEDHA) and the Institute for Governance and Sustainable Development (IGSD), for the implementation of The Policy and Advocacy Network for Latin America (PAN LAC).

Overview.

This workshop was the *official inaugural* launch of the Policy Advocacy Network for Latin America (PAN LAC) to promote clean brick production. Pursuant to design an purpose of PAN LAC, which is to bring together public officials and other brick production experts to identify gaps and opportunities to improve the efficiency and reduce de social and environmental impacts of traditional brick production. This “official” inaugural meeting of the PAN LAC which was actually the *second* meeting of the network—as the first meeting was held in October of 2014 as an addendum to a technical capacity building workshop organized by partner Swiss Contact, in Cuzco, Peru.

This official inaugural meeting of the PAN LAC, which took place in Maule, Chile was a direct consequence of governmental engagement which occurred between CEDHA (the Coordinator of PAN LAC) and a representative of the government of Chile, which expressed interest while in Cuzco, to hold the inaugural meeting of the PAN LAC. Officials of the CCAC, and of the government of Chile, subsequently were instrumental in laying out the institutional political support for the PAN LAC meeting to take place. The final decision and commitment by Chile and the CCAC to hold the workshop in Maule occurred at the CCAC’s working group meeting in Kathmandu Nepal in late-February, during which the date for the workshop (April 27-28) was confirmed.

The PAN LAC workshop in Maule, Chile, provided the space for public officials from countries throughout Latin America, to gather to discuss public policy barriers and opportunities to address some of the more salient social, economic and environmental problems with traditional brick production.

Representatives from Mexico, Guatemala, the Dominican Republic, Colombia, Peru, Chile, Argentina, Paraguay, and Brazil, and from the several international agencies, including the World Bank, the Pan American Health Organization, the United Nations Coalition for Climate and Clean Air (CCAC). In addition representatives from key Chilean government agencies, including the Ministry of Environment, the Development Promotion Corporation (CORFO), as well as municipal and provincial authorities and NGOs as well as local brick producers and academic representatives also attended.

The two-day workshop included a site visit to two localities (Cauquenes and Linares), where approximately 50% of Chile's traditional brick production takes place, to visit brick kilns in production. Several panel presentations reviewed the state of the art and evolution of brick production in several countries in the region, as well as diverse dynamics related to brick production including labor standards, health, finances, environmental, labor and other strategic public policy directed at addressing the various dynamic and impacts of brick production. Finally, the workshop also offered a space to discuss and propose ways to help Chile address its brick production impacts and develop a public strategy to address the sector as well as an opportunity for participants to contribute to a future strategy for the PAN LAC network (which contributes to deliverables (5) and (9) of the PAN LAC).

Participants:

There were approximately 60 participants at the event.

The participants included public official representatives and advisors from national ministries from Mexico, Guatemala, the Dominican Republic, Colombia, Brazil, Peru, Chile, Paraguay and Argentina. Legislative representatives were also present (from Paraguay). Technical and thematic experts (on technology, health, labor, finances) from various countries attended. Several high level authorities also attended the workshop including, the Vice Minister of Environment of Chile, the Governor of the State of Maule Chile, the Head of the UN's CCAC, the Regional head of Environment of Maule, as well as local municipal authorities. Representatives from international agencies including the World Bank and the Pan American Health Organization, also attended and participated as panelists in the event. Several local producers also attended the event. Representatives from local and foreign NGOs were also present.

Agenda/Format for Presentations and Discussions / Activities

The format for the event was panel presentations with questions and debate, break-out tables and debate, plenary summaries of break out sessions, a site visit to two local brick producers and a final participatory strategy discussion.

Panel 1 covered issues related to the CCAC and related activities on the brick sector, the brick sector evolution in Latin America, health dimensions of brick production, labor conditions in brick production, and financial instruments and policy.

Panel 2 focused on country case studies, including Mexico, Brazil, Peru and Colombia.

Panel 3 addressed the nature and state of the art of brick production in Chile.

Session 4 was a break out session to address barriers and opportunities to improve brick production efficiency and reduce impacts.

Session 5 focused on recommendations from the group for developing a brick sector strategy for Chile

Session 6 focused on future strategies for the PAN LAC network.

Site Visit: The morning of day two was a site visit to the localities of Cauquenes and Linares, to witness actual brick production at traditional brick kilns.

Conclusions/Products of the Workshop

[in no specific order or priority]

- The workshops help public officials better understand the oftentimes “invisible” problems generated by traditional brick production including severe air contamination, health impacts, labor code violations, as well as incongruences and economic imbalances.
- Public officials were exposed to public policy challenges and potential solutions to gaps, as well as identifying opportunities to advance more effective public policies for the brick production sector.
- The workshop provided key exchanges and learning opportunities for public officials present which they can in turn use at their places of origin to address brick production, aim at reducing negative environmental, social and economic externalities from brick production.
- The workshop solidified the interest and intent of numerous countries to participate, engage and implement policies and programs to address the negative externalities caused by brick production.
- The workshop generated much interest by other counties (eg. Mexico, Paraguay, Peru, Dominican Republic) to seek further assistance from the PAN LAC network and from the CCAC to design and implement policies for reducing environmental and other impacts the brick sector.
- The workshop provided Chile the political scenario for taking a firm stance on brick sector impacts and to place in motion an effort to design a program to address impacts from the sector. Chile announced US\$50 million in investments (during and at the workshop) to address air pollution and reduce contamination 70% in the next 10 years.
- As a consequence of the workshop, Chile requested further assistance from the CCAC to develop a brick sector strategy to reduce sector impacts.
- The workshop provided a space to discuss future activities and opportunities for the PAN LAC.

Notes/Conclusions from Panel Sessions:

First Session: Brick Kilns in Latin America

[in no specific order or priority]

- The brick sector has been an “invisible sector” which means it needs to be “placed” in public policy
- There is little or no public “policy” directed at the sector
- There needs to be an integral vision for production
- The entire supply chain must be addressed
- It is important to consider worker health in the various stages of production
- Air quality controls directly affect human health in the sector
- Child labor is problem in some of the countries
- We must work with a “social” approach to the problem of child labor and working conditions
- All countries are interested in economic analysis of the sector
- We must facilitate and promote investments
- We need access to credit
- The Chinese example shows a strong push to replace clay bricks
- One prominent tendency is the use of the Brazilian moving ovens
- We must use the opportunity of exchange provided by PAN LAC, sharing experiences, meeting, to advance collectively
- Investment costs are NOT costs, but savings
- We must resolve inequalities and informalities

Second Session: Case Studies (Mexico, Brazil, Peru, Colombia)

[in no specific order or priority]

- All countries absolutely need Brick Kiln inventories (stock taking) and a sector analysis
- Fiscal incentives are key to achieve transformation
- Inter-ministerial collaboration is key
- We need an integral characterization of the sector
- We must use a “stick” policy with violators
- We must eliminate old/bad technology and replace with cleaner ovens and technology
- Certain oven designs are achieving emissions reductions by introducing technological changes (blowers, fuel, oven design, etc.)
- GEF Funds have helped the sector
- Emissions measurement is important and can help the sector
- Participatory spaces for discussion at a national level can help the public sector strategy (eg. Colombia)
- We should look at national measurements (NAMAS) as a best practice

- There are significant bureaucratic barriers to removing informalities which need to be addressed
- We need a PAN LAC to disseminate work underway on public policy
- There are examples (Colombia) of successful public policy

Notes from Strategy Session on Brick Sector for Maule Chile

Characterization of Maule

[in no specific order or priority]

- Ready access to fuel
- Product commercialization is dominated by few actors (not good)
- Clay input could be improved but comes “as is” with no participation from producer on extraction site or quality
- There is cultural resistance to change
- There is fear associated with change due to past failures
- Change must be gradual and by example
- Cannot envision very sophisticated machinery at early stages of change
- Much fear over financial insecurity of investment
- There are possible two or three strong products
- There is no current classification or quality assessment of products
- Past failed experiments are detrimental in the collective mindset
- Poor combustion and much emissions in current production
- There are no incentives to save on fuel
- Product quality is low
- There is wide mistrust
- Change comes generally from pressure from officials
- Change has no incentive since the demand sector is set; the buyer buys poor bricks with no reservations
- Incorrect idea that the quality of the clay does not work with pressing and cutting machinery (that would improve production substantially)
- Smaller producers have more incentive to change
- Larger producers have less incentive to change (formalization will be costly to them)
- Producers are in “comfort” zone
- Poor labor conditions (violate human rights); no basic facilities
- Smoke affects workers and local residents
- Working conditions are prone to back problems
- No health benefits or insurance for workers
- Larger producers blame workers for code violations and informality
- Shared properties present scalable opportunities

- Larger producer has complex commercial relationship with numerous smaller producers
- Sector suffers from systemic indifference to problems
- Need for greater public oversight and regulation of sector
- Need to look at land use code and stipulations
- Not clear on extraction authorization, quality control, business model, complaints, etc. need more oversight on these
- Little producer knowledge on relevance of clay mix quality
- Brick production happens alongside other commercial/industrial activity
- Need to formalize the business
- Need to engage LARGE buyers like SODIMAC to raise quality of product
- Need to reduce black carbon emissions
- There is no public control over the sector
- There have been no public programs to induce change/investments
- Chile's brick sector has been invisible and needs to change

Recommendations

[in no specific order or priority]

- Diversify channels of commercialization
- Diversify technologies
- Need inventory and characterization/analysis of sector
- Need more info on stages of production
- Need better grasp and understanding of the business model
- Need to identify best technologies adaptable to Chile
- Need to regulate emissions
- Need to focus on fuel emissions
- Need specific program targeting specific issues
- Need quality control
- Need to build confidence/trust
- Need training on clay/inputs/technology/burning/oven design, etc.
- Need a regulatory stipulation on brick content/quality/process
- Need follow-up training
- Need quick wins
- Need a methodological instrument/guideline/strategy for the sector for short and long terms
- Change needs to work the producer vision
- Need to focus on "reconverting the business and productive model"
- Need to differentiate small and larger producers
- Might benefit from a unification of price of smaller producers
- Jobs must be conserved in the change
- Collectives may be a useful model
- Need a "labor" code for the sector

- Workers urgently need health insurance access
- Need to establish and apply quality controls
- Sector needs to know that “formality” is coming
- Need local training / workshops
- Need a diagnostic for the sector
- Need a participatory process/engagement
- Need to move beyond environmental dimension
- Need to better control extractive dimension of activity
- Need controls over fuel (wood) use
- Need a public policy for the sector
- Need a good diagnostic before strategy is developed
- Need good examples of change
- Need education for actors in the sector
- All parts of government must be at the table to engage (ministries, local, etc.)
- One ministry must lead (Environment?)
- Need national norms and help to implement locally
- Need to eliminate bad technology

Notes from Strategic Discussions for PAN LAC

[in no specific order or priority]

- Participants in PAN LAC need help in completing the chain of learning, as we do diagnostic exercises y activities are identified and implemented
- The subjects that are addressed by PAN LAC are very important (Mexico) and we need the specific focus (public policy) offered by PAN LAC, which is not found anywhere else
- We have public policy, but we do not have spaces to access assistance on public policy issues
- We could use a guidance manual por public policies related to the brick sector
- How do we link the Maule case with a case study exercise and see the results of our past network activities?
- PAN LAC can be used to exchange experiences in working on public policies related to the brick sector
- We need a future vision for PAN LAC, otherwise we will not be able to develop and implement policies
- There are written policies and non-written policies and we need to more fully grasp where these are in relation to the brick sector
- We need cross cutting policies that engage and imply other ministries
- We need institutional spaces to work between ministries, to resolve the complex nature of the brick sector
- The environmental authority in each country is the ideal point of departure to trigger other ministries and public agencies at other levels (municipal, regional, etc.) to engage
- We need to catalogue the various experiences out there on brick production
- PAN LAC should take on Maule as a test case for implementing activities
- PAN LAC (the policy network) should not be separate from the technical work and other past components of CCAC activities on bricks (economic, technical, protocol, etc.)
- Question as to how to coordinate the multi-tiered work and various stages
- Technical issues should compliment/support the political work
- We must give institutional underpinning to the work of PANLAC
- A guide/manual would be helpful in order to transfer knowledge
- PAN LAC must focus specifically on convincing and engaging governments
- As a network, we have more leverage than as individuals, even within governments, the PAN LAC can help a particular public official to gain recognition and support from higher authorities (a Minister, for example)
- PAN LAC should engage and influence National as well as Local governments
- PAN LAC should create awareness, sensitivity to, and importance to the brick sector
- PAN LAC can help bring international work on bricks and emissions, to the local level

- NAMAS are national commitments, PAN LAC can help lead work on NAMAS for the brick sector so that they are properly implemented
- There are several forums in which we always speak of the need for public policies, the value added of PAN LAC is precisely that it offers public policy discussions and focus
- We need indicators to measure progress and influence
- Partners need financing to implement activities, and at the very least a guide to identify what activities to take on
- We need scientific underpinning to help inform public policy choices
- The experience of seeing how the sector is addressed in other countries is key in order to take experiences back to ones home environment
- Identifying specific actions to carry out is sometimes difficult, a first step to make the issue/problem visible
- PAN LAC can coordinate the implementation of public policies in the Bricks Initiative of the CCAC
- We must strive for an integral approach to public policy on bricks, focusing on emissions, technical issues, human rights, social and economic impacts, etc.
- We should consider taking this discussion to regional forums such as the MERCOSUR

Administration and Budget Allocation

CEDHA organized the workshop, as stipulated in the contract with IGSD, including the coordination and financing for travel, lodging, and meals (as well as other costs) of international participants. The expenses incurred were within the limits allotted in the original budget of the workshop.

**Note: This report comes later than the anticipated deadline of March 30th, due to the fact that the workshop originally planned for February 28, was moved to April 27, 2015, as per the arrangements made with the government of Chile to host the workshop at that time. This movement of date was discussed and approved by the CCAC.*

Annexes:

- 1) Agenda
- 2) International Participants
- 3) Photos

AGENDA

Reunión Inaugural de la Red Latinoamericana de Políticas Públicas para la Producción Limpia de Ladrillos

Región del Maule, Chile
Lunes y Martes 27 y 28 de Abril, 2015

Lugar del Evento: Hotel Casino Talca, Av. Circunvalación Oriente 1055. Región del Maule, Chile

AGENDA

Términos de Referencia del Evento:

La reunión inaugural de la Red Latinoamericana de Políticas Públicas para la Producción Limpia de Ladrillos, organizada por el Gobierno de Chile y el Centro de Derechos Humanos y Medio Ambiente (CEDHA), dentro del marco de trabajo de la Coalición de Clima y Aire Limpio para la reducción de contaminantes de vida corta (CCAC), se realizará en la ciudad de Talca, ubicada en la Región del Maule, Chile, los días 27 y 28 de abril del presente año.

La actividad busca intercambiar experiencias sobre la evolución y el diseño de políticas públicas relacionadas con ladrilleras, permitiendo con ello explorar la práctica de implementación de políticas para el sector ladrillero, se evaluarán los roles y dinámicas de los diversos niveles jurisdiccionales gubernamentales que intervienen en la política pública enfocada a este sector, ofreciendo a los participantes información sobre las distintas tecnologías que se están implementando en la transformación y producción de ladrillos, se identificará la legislación aplicable que se ha puesto en práctica en la materia, y se darán a conocer ejemplos de las mejores prácticas de seguimiento, monitoreo e intervención pública en el sector ladrillero.

Lunes 27 de Abril 2015 / Lugar: Salón Hotel Casino Talca

8:30 - 9:00 Registro de Asistentes

9:00 - 10:00 Bienvenida y Saludo de Autoridades.

Saludos Protocolares y discurso autoridades:

1. Marcelo Mena, Subsecretario del Medio Ambiente de Chile
2. Hugo Veloso, Intendente de la Región del Maule
3. Helena Molin Valdés, Directora de la Secretaría de la Coalición del Clima y Aire Limpio para Reducir los Contaminantes de Corta Vida (CCAC) con su Secretariado en el Programa de las Naciones Unidas para el Medio Ambiente (PNUMA)
4. Jorge Daniel Taillant, Director del Centro de Derechos Humanos y Ambiente (CEDHA) y Coordinador del PAN LAC

10:00 - 10:10 Introducción y objetivos de la jornada

Objetivo General:

Generar intercambios de experiencias sobre la evolución y diseño de políticas públicas relacionadas con ladrilleras, logrando con ello conformar la Red Latinoamericana de Políticas Públicas para la producción limpia de ladrillos.

Objetivos Específicos:

- Intercambiar experiencias e identificar políticas públicas transformadoras en materia de ladrilleras;
- Desarrollar y fortalecer políticas, acciones programáticas, y planes estratégicos que se están implementando para el sector y que se puedan replicar en la Región;
- Evaluar y generar estrategias que permitan mejorar los mecanismos existentes en el mercado y que vayan en apoyo para el desarrollo más eficiente y sustentable del sector.
- Generar un plan de trabajo de la PAN LAC para los próximos 5 años, incluyendo con ello los nuevos encuentros y avances de los objetivos pactados por los participantes de la Red.

10:10 - 11:10 Ladrilleras en Latinoamérica

Sesión N°1 Cada expositor tendrá un tiempo máximo de 10 minutos cada uno.

Se solicitará utilizar no más de 10 diapositivas para su exposición

En este panel se expondrá la situación actual del sector ladrillero. Se abordarán desafíos pendientes y los avances realizados del sector, relativos a la implementación de políticas públicas orientadas al sector ladrillero.

Moderador en Sesión N° 1: Jorge Daniel Taillant

1. **Iniciativa de ladrilleras de la CCAC**
Catalina Etcheverry
Coordinadora, CCAC
2. **Sector ladrillero en Latinoamérica**
Jon Bickel
Representante de Swisscontact en Perú
3. **Ladrilleras y Salud**
Lelys Archila Escorcía
Consultora, Organización Panamericana de la Salud (OPS/OMS)
4. **Ladrilleras: Evolución de políticas y finanzas**
Jie Li
Especialista en Energía y Medio Ambiente, Banco Mundial

11:10 - 11:20 Ronda de Consultas (Una por expositor).

11:20 - 11:40 Café

11:40 - 12:40 Desafíos en Políticas Públicas y Ladrilleras

Sesión N° 2 Cada expositor tendrá un tiempo máximo de 10 minutos cada uno. Se solicitará utilizar no más de 10 diapositivas para su exposición.

Este panel se enfocará específicamente en los desafíos y experiencias en la implementación de políticas públicas relacionadas con el sector ladrillero, mostrando la experiencia de otros países en la materia.

Moderador en Sesión N° 2: Helena Molin Valdés

- 1. Caso México**
José Abraham Ortíz Álvarez
Jefe del Departamento de estudios sobre transporte e impacto de contaminantes atmosféricos, Instituto Nacional de Ecología y Cambio Climático (INECC)
- 2. Caso Brasil**
María Elizabeth Morales
Consultora, Instituto Nacional de Tecnología INT/MCTI
- 3. Caso Perú**
Eric Eduardo Concepción Gamarra
Dirección General de Calidad Ambiental, Coordinador
Ministerio del Ambiente
- 4. Caso Colombia**
Fabiola Luisa Suarez Sanz
Directora, Corporación Ambiental Empresarial (CAEM)

12:40 - 12:50 Ronda de Consultas (Una por expositor.)

12:50-13:30 Sector ladrillero en Chile y la región del Maule: Realidad y desafíos.

Sesión N° 3 Cada expositor tendrá un tiempo máximo de 10 minutos cada uno. Se solicitará utilizar no más de 10 diapositivas para su exposición.

- 1. Caso Chile: Visión Nacional y Local**
María Eliana Vega Fernández
SEREMI del Medio Ambiente
Ministerio del Ambiente en la Región del Maule
- 2. Caso Chile: Visión Nacional y Local**
Osvaldo Alcázar
Secretario Regional del Comité de Producción Limpia Maule
- 3. Caso Chile: Visión Empresarial**
Nelson Rojas
Ejecutivo técnico de la Corporación de Fomento de la Producción (CORFO) Maule.

13:30 - 13:40 Ronda de Consultas (una por expositor).

- **Resumen y cierre jornada de la mañana:** María Eliana Vega Fernández.

14:00 - 15:00 Almuerzo

15:00-18:00

Sesión N° 4 Mesa de Trabajo: Estrategias para abordar al Sector ladrillero en Chile y la Región.

Este espacio tiene como objetivo generar el diálogo entre los participantes, que permita conocer sus experiencias, percepciones, propuestas y posibles soluciones, con el fin de generar políticas públicas en el sector ladrillero.

Moderador en Sesión N° 4: - Catalina Etcheverry

- Patricia Tord
- Jorge Daniel Taillant
- Andrea Brevis

- ¿Cuál es la legislación marco necesaria para un abordaje efectivo del sector ladrillero (nacional y local)?.
 - ¿Cuál es la repartición/distribución ideal de roles y responsabilidades de actores públicos para ordenar y hacer más eficiente el sector?
 - ¿Cuáles son los desafíos económicos y técnicos principales para implementar una política pública efectiva para el sector?
 - ¿Cómo pueden ayudar los organismos internacionales tales como la CCAC, en la evolución del sector?.
 - ¿Cómo puede ayudar la Red PAN Lac en esta evolución?
- Plenario.

18:00- 18:30

Conclusiones y cierre del día

Este espacio servirá para enumerar las principales conclusiones, revelaciones e ideas directrices para el sector que se presentaron y se debatieron durante el día y cómo la Reunión inaugural de la Red Latinoamericana de Políticas Públicas para la Producción Limpia de Ladrillos, puede ayudar a los países para mejorar el sector ladrillero. Se elaborará, a partir de esta Sesión, un borrador para la elaboración de un plan estratégico para la PAN LAC. Se continuará este panel en la sesión de la tarde del día 2.

Martes 28 de abril 2015

8:00 - 13:00 Salida a terreno

Destino: Linares, visita a dos ladrilleras.

13:00 - 14:30 Almuerzo y Retorno al lugar del evento.

14:30 - 16:30 Estrategias de Abordaje Caso Región del Maule.

Este espacio se utilizará para reflexionar sobre las visita a las ladrilleras e intercambiar opiniones de los participantes sobre posibles direcciones estratégicas, soluciones y políticas aplicables al caso de Región del Maule.

16:30-17:30

Plan Estratégico PAN LAC

Trabajo en grupos.

Este espacio está reservado para cerrar la estrategia futura de PAN LAC, enunciando los 5 temas prioritarios en su orden de prioridad y el trabajo y productos previstos para los próximos 5 años.

17:30 - 18:30

Conclusiones, Próximos Pasos para PAN LAC y Cierre

Este espacio es para reflexionar sobre el aprendizaje del evento. Se listarán las principales conclusiones del evento y se delinearán los próximos pasos para la Red PAN LAC. Las autoridades locales, nacionales e institucionales darán cierre al evento.

Tareas/responsabilidades para los participantes:

1. Traer consigo las principales leyes/regulaciones/políticas que rigen al sector ladrillero (calidad de aire, regulaciones de uso de suelos-minería, principales políticas públicas de producción industria relevantes para el sector, etc.)
2. Estar dispuesto y preparado para presentar información pertinente sobre las políticas del sector ladrillero de su país y sobre las características productivas del sector.

International Participants and Chilean Authorities

Jose Abraham Ortíz

Instituto Nacional de Ecología y Cambio Climático (INECC), México

Anahí Aizpuru

Observatorio de Trabajo Infantil, Ministerio de Trabajo de Argentina

Oswaldo Alcázar

Secretario Regional del Comité de Producción Limpia, Maule, Chile

Lelys Archila Escorcía

Organización Panamericana de la Salud (OPS)

Jon Bickel

Swiss Contact

Andrea Brevis

Seremi, Chile

Eric Concepción

Ministerio de Ambiente, Perú

Catalina Etcheverry

Coordinadora (CCAC-PNUMA)

Jie Li

Especialista en Energía y Medio Ambiente, Banco Mundial

Marcelo Mena

Subsecretario del Medio Ambiente de Chile.

Maria Elizabeth Morales

Instituto Nacional de Tecnología, INT / MCTI, Brasil

Helena Molin Valdés

Directora de la Secretaría de la Coalición del Clima y Aire Limpio para Reducir los Contaminantes de Corta Vida (CCAC – PNUMA)

Nelson Rojas

Corporación de Fomento de Chile

Federico Schroeder

Dirección General del Aire, Secretaria de Ambiente, Paraguay

Fabiola Luisa Suarez Sanz

Corporación Ambiental Empresarial (CAEM)- Colombia

Jorge Daniel Taillant

Director del Centro de Derechos Humanos y Ambiente (CEDHA). Coordinador de la Red Latinoamericana de Políticas Públicas para la Producción Limpia de Ladrillos

Patricia Tord

Swiss Contact

Maria Eliana Vega Fernández

Ministerio del Ambiente, en la Región del Maule, Chile

Hugo Veloso

Intendente de la Región del Maule.

PHOTOS:



Governor (intendente) of Chile's Maule Region addresses plenary



Jon Bikel of Swiss Contact reviews brick production in Latin America



Anahi Aizpuro of the Ministry of Labor of Argentina discusses child labor in brick production



Abraham Ortíz of Mexico's Environment Ministry (INECC) discusses Mexico's climate strategy and its relationship to the brick sector



Eric Concepción of Peru's Environment Ministry shares Peru's Clean Air Strategy and Brick Production



Patricia Tord of Swiss Contact summarizes her discussion group's conclusions on a brick sector strategy for Chile



A brick producer from Linares Chile shares ideas with Enrique Kato, a brick sector expert from Mexico that has worked on the CCAC's Market Strategy Analysis for the Brick Sector



Camilo Quineros, a brick technology expert from Colombia, inspects the producer's bricks for quality.



Brick Producer from Cauquenes gives the group a tour of his facilities. Brick kilns are in the background.



Producer from Linares Chile discusses technology inherited by his grandfather used in the clay mix.



Faulty brick clay mix, poor buring technique and kiln design results in poor product quality.



Black Carbon and other emissions result from improper buring techniques.



Raw wood fuel, poor kiln design, added to no oxygenation result in improper combustion and unnecessary contamination.



Workshop participants inspect brick kiln oven as it is fed fuel



Clay tiles prepared and laido ut by hand





Worker prepares and lays out some 3000-5000 bricks daily, by hand.





Eldery worker molds and lays out bricks on floor by hand

