MONGOLIAN NATIONAL
CHAMBER OF COMMERCE
AND INDUSTRY

GREEN PAPER
2008-2009

3C: CLEAN ENVIRONMENT,
CLEANER PRODUCTION AND
CLEAN FOOD

ULAANBAATAR, MONGOLIA

CONTENT

FOREWORD

Time for change: Transforming from a 'brown' to a 'green' economy

Today in Mongolia, environmental problems are rising in line with economical growth, climate change and increased human activity. Poorly managed industry, the inefficient use of materials, low household incomes and over expenditure are additional factors to these problems. Every day in the media it can be clearly seen the environment is affected by human activity, how many rivers and lakes are dry due to nearby mining activity, and how many people are hospitalized due to food poisoning.

This paper aims to attract attention from officials and citizens alike to these problems, and point some possible solutions. Such solutions incorporate cleaner production principles, carbon trade possibilities (within CDM), wider use of energy efficient technologies and renewable energy.

In Mongolia, over the coming years, we are facing a 'development dilemma': traditional natural resource-based development versus a green development agenda backed by a sustainable resource-based development program. Environment policy must be a No. 1 priority of the country's future development policy. Making an environment policy a development priority will bring new, green differences including:

- a green rule of law and dynamic policy transition from older economic policies and initiatives, through to a more sustainable economic and legal framework;
- allocation and re-allocation of human, capital and financial resources to favor greener business practices;

- changes in traditional policy mindsets changes across all industry sectors;
- stronger and more effective PPP (People – Planet - Profit) mechanism among all stakeholders including government, private sectors and civilians to support and favour green development concepts; and
- changing macro and micro criteria of development performance indicators to align with green policy principles.

As Mongolia goes through massive economic and social transformations, dangers to its fragile ecosystems and natural resources are mounting. Like everywhere on Earth, Mongolia's environment is threatened by a number of interrelated problems that are on the brink of growing much larger very fast. Similar to other transition economies in the former Soviet block, Mongolia's switch to a free market led to initial economic hardship and triggered such problems as over-hunting of endangered species, over-cutting of forest, overgrazing of pastureland and mining without environmental control.

A decline in water resources also presents a significant issue. Continued drought, annual forest fires, human activities such as the uncontrolled use of water in mining, and overgrazing (especially in desert areas) have caused a drop in ground water levels in recent years. Many springs and wells have dried up altogether, while poor management of these resources is damaging water supplies and creating health problems as residents drink unsafe water. Desertification is increasing. Years of continued drought brought on by climate change, uncontrolled mining and overgrazing are resulting in the expansion of the Gobi Desert into the steppe. Areas that were grassland thirty years ago are now

arid, restricting herder's livelihoods. Growing offshore markets for products such as cashmere, notably with China, are leading to the expansion of herds and overgrazing of land (especially in Gobi areas). Multi-track roads are scarring the landscape. Unpaved roads and poor road maintenance have led to multi-tracks all over the country. This is an infrastructure problem, but it is causing land degradation and dust, which are adjoining pastureland and creating health problems for residents in many communities. These problems could be addressed through the framework of the '3C' initiative (Clean Environment – Clean Production - Clean Food).

Within the framework of "The year of food supply and safety 2008" announced by the Government, there are a number of activities being implemented across the country such as:

- the set-up of a favorable legal environment for the development of sustainable production practices;
- capacity building of independent, neutral laboratory food safety investigations; and
- improvement of control and verification systems for food safety.

Within the framework of implementing the Mongolian National Action Plan on Food Security, and the purpose of drafting a national action program which prioritises cleaner production practices, safer food, sustainable and clean products, the Mongolian National Chamber of Commerce and Industry (MNCCI) initiated the "GREEN-LABEL" and "GREEN BAR CODE" concept. The green label and bar code are issued to select products, which are manufactured to strict eco-friendly standards. The initiative aims to promote awareness of best technology practices, production processes, and to instill

healthy food consumption practices amongst consumers and businesses.

In the 21st century, economic development is defined increasingly by its commitment to sustainable development whilst protecting an ecological balance. Recognizing the importance of this movement, the MNCCI has initiated the Green Credit Guarantee Fund. In the last 2 years the Green Credit Guarantee Fund has issued a total of 415,5 million Tugrik loans to 8 business entities in the areas of fuel and energy efficiency, water purification, waste reduction, and recycling for a three-year period. Of these loans, 20-80% were offered through collateral guarantees of the Fund's own assets. In addition, the Green Credit Guarantee Fund obtained 1 billion Tugrik in loans from the Government of Mongolia at a discounted loan rate in 2007, and has issued the loans to 13 SMEs on a preferential basis with a particularly low loan rate.

The main objective of this green paper has a purpose is to raise public awareness of environmental problems caused by the combination of fast economic growth, climate change and unregulated human activity. It also aims to highlight new sustainable business and industry policy that can address these growing concerns. Despite such problems, this paper seeks to present green, environmentally friendly alternatives to current industry practices. Implementing a 3C approach, Mongolia can overcome such environmental problems while continuing to emerge as a strong free-market economy.

I. CLEAN ENVIRONMENT

ENVIRONMENTAL ISSUES IN MONGOLIA

Mongolia is a vast, desolate land with 1.564 million square kilometers of steppe, taiga, mountains and desert and only 2.7 million people. It is one of the most sparsely populated countries on earth. Its unique and largely undamaged environment has led Mongolia to protect up to 10 per cent of its territory through National Parks. However, as the country goes through massive economic and social transformations, dangers to its fragile ecosystems and natural resources are mounting.

Like everywhere on Earth, Mongolia's environment is threatened by a number of interrelated problems that are on the brink of growing much larger very fast. Similar to other transition economies in the former Soviet block, Mongolia's switch to a free market led to initial economic hardship and triggered such problems as over-hunting of endangered species, over-cutting of forest, overgrazing of pastureland and mining without environmental control.

Below is an overview of the major environmental issues which currently, and will increasingly, effect Mongolia.

Land Degradation

Cultivation and overgrazing of land, forest fires, uncontrolled mining, logging and climate change are all affecting Mongolia's land. Economic transition is speeding up some of these processes, threatening herders traditional way of the life and the country's rich biodiversity.

The steppe is being overgrazed. Approximately 40 million livestock graze on 117 million hectares of pastureland - about 75% of the country. Economic difficulties are putting pressure on herders whose traditional distribution systems are breaking down. This is resulting in overgrazing of prime pastureland, especially near settlements. More and more herders are adopting a semi-permanent existence living on land adjusted to regional centres where they can better access markets.

Over-cutting is depleting forests, which cover around 17 million hectares-around 10% of Mongolia - mostly in the northern regions of the country. Saxaul groves in desert areas cover another 4 million hectares. Both are threatened by firewood gathering, as the availability and cost of fuel becomes higher. Such materials are also used in the construction industry. In addition, spring forest fires, usually started by human activity, are damaging forests and their watersheds and leading to serious erosion.

Water resources are also declining. Continued drought, annual forest fires and human activities such as uncontrolled use of water in mining and overgrazing (especially in desert areas) have caused a drop in ground water levels over recent years. Many springs and wells have dried up altogether, and poor management of these resources is damaging water supplies and creating health problems as residents drink unsafe water.

Desertification is increasing. Years of continued drought brought on by climate change, uncontrolled mining and overgrazing are resulting in the expansion of the Gobi Desert into the steppe. Areas that were grassland thirty years ago are now arid and this is restricting the livelihoods of herders. Open markets for products such as cashmere - notably with China - are leading to the expansion of herds and overgrazing of land especially in Gobi areas.

Multi-track roads are scarring the landscape. Unpaved roads and poor road maintenance have led to multi-tracks all over the country. This is an infrastructure problem, but it is causing land degradation and dust, which are adjoining pastureland and creating health problems for residents in many communities.

Biodiversity Conservation

Mongolia's ecosystems contain a wide variety of flora and fauna. However, as the country undergoes rapid economic and social change, threats to these species are mounting.

Poaching is rampant. Varieties of species-many endangered-are poached for their medicinal qualities and sold illegally, usually outside Mongolia. Musk deer are killed for their valuable scent glands, brown bears for their gall bladders, argali sheep, ibex and elk for their impressive antlers, snow leopards for their pelts and bones, saiga antelope and gazelle for their horns and marmots for their skin. Despite environmental laws that restrict these activities, enforcement is difficult due to understaffing of environmental inspectors and inadequate training. Herders are the main culprits and their traditional lifestyle adds to the problem-they are used to a free way of life and have little knowledge of regulations. Reaching these groups and educating them is major undertaking.

Due to human activity and climate change, habitats of some rare species are under threat. Continued drought and human activities are causing some lakes and springs to dry up, affecting natural food supplies for a number of species. Infrastructure development and over-hunting are also adding to the problem. For example, the depletion of marsh grasses in areas around the great lakes depression in the west of the country is leading to a decline in bird species and wild boars. Popular wild sea-buckthorn

berries – collected for their healing qualities as well as their tart taste - are routinely damaged as stems are frequently broken off, resulting in a decline in production. Other medicinal plants are also at risk as they are frequently over-collected. The market system is creating a strong demand for many of these products, with little sense of responsibility for their future supply.

Urban Pollution

Mongolia's towns and cities are suffering from aging infrastructure and poor maintenance due to the economy's rapid transition and growth. Systems of waste removal are often barely functioning. There is little individual responsibility and waste is thrown at random, left for dogs or tossed into nearby rivers. Cans are thrown out car windows. Burning cigarettes are flicked into the bush. Clean-up campaigns are a popular activity, but they often don't address the causes of the problem. A significant change in citizen-attitude is necessary, along with effective waste removal systems. Recycling is now an increasingly viable option due to growing markets for cans, bottles, bones and other solid wastes.

Urban water supplies are often polluted, with local authorities frequently unable to maintain deteriorating water systems due to lack of funds and management problems. In rural communities, poorly functioning water suppliers are forcing residents to use local springs and rivers. These resources are been sometimes polluted and, together with high mineral content in the water, are causing health problems. Some industries, especially tanneries, flushing their wastewater directly into river systems, also causes serious pollution. Further, inadequate water testing procedures is causing confusion about this issue.

Air pollution in the cities is leading respiratory ailments. This is big problem in Ulaanbaatar, where three power plants and number of households in the Ger Districts burn low-grade coal and pollute the air with sulfur and carbon dioxide, especially during winter months. While some new technology is being installed to lessen pollution emitting from the power plants, the rapid growth of the Ger Districts in the city is escalating the problem, as these poor residents are also burning coal and wood. The number of vehicles in Ulaanbaatar has increased dramatically adding to the problem. There is no emissions test or regulations to take heavy- polluting vehicles off the road. More research is needed to analyze the extent of this problem, and its seriousness as a health issue.

GREEN ACTIVITIES OF THE MNCCI

Corporate Social Responsibility

"THE CORPORATE SOCIAL RESPONSIBILITY COUNCIL" within the MNCCI

In recent years, there is a worldwide acknowledgement that the basis for sustainable economic and business development is corporate governance, and Corporate Social Responsibility (CSR). In line with this, the MNCCI has paid specific attention to the advancement of CSR in Mongolia and has started issuing the Excellence in CSR award. With the objective to support, develop, promote, and provide a leadership in the CSR practices of the Mongolian industries, business enterprises and organizations, the MNCCI established the CSR Council in November 2007.

In 2009, the CSR Council has 18 members, head by the CEO of XacBank, Mr. M Bold. The following leading companies in Mongolia constitute the membership of the CSR Council:

1. Mobicom Corporation	2. Golomt Bank
3. Xas Bank	4. Monos Group
5. Bishrelt Holding	6. APU JSC
7. Petrovis JSC	8. Sergen Mandalt Group
9. CFC Group	10. Moncord Credit & Saving Union
11. Namir invest Co.,Ltd	12. Tsombo Co.,Ltd
13. EMJJ Co.,Ltd	14. Zoos Bank
15. MCS Holding	16. Legal Bridge Law Firm
17. Khan Bank	18. Energy resources LLC

Activities

The CSR Council has implemented the following activities over 2008 - 2009:

The survey "CSR Index-2008":

The survey revealed that implementation and development of CSR is a necessary component of growing business activity in Mongolia. This is significant finding, and it is important for both the public and private sectors to conduct actions to further promote and develop this trend. In a rapidly globalizing world, CSR has emerged in the limelight as an important issue, and Mongolia cannot lag behind this development. This is, especially, very important for businesses, and from the survey it can be seen that there is a need to organize CSR training and seminars in Mongolia with the help of experts and specialists in this area, to publish a CSR handbook in the short-term, and to update the Mongolian business community with ongoing global developments in CSR.

National Forum on Corporate Social Responsibility - 2008:

The CSR Council, in cooperation with the UNDP Resident mission and MNCCI, successfully organized the Inaugural Mongolia National Forum on Corporate Social Re-sponsibility on 13 June 2008 at the Mongol Bank premises. More than 150 companies participated at this Forum, and the pioneers in CSR development like Xas Bank, Mobicom Corporation, Golomt Bank, Petrovis Co., Ltd., and the Sustainable Development and Re-sponsible Mining NGO presented their CSR actions and experiences.

Three companies (Golomt Bank, Petrovis Co., Ltd. and APU JSC) have been honored with the "Excellence in CSR Award" in recognition of their successes in CSR actions. This award was previously presented to Erdenet Co., Ltd., MCS Group, Trade and Development Bank, Mobicom Corporation, Xas Bank, Monos Group, Tavan Bogd Group, Gatsuurt Co., Ltd., Monpolimet Co., Ltd., Khaan Bank, and Darkhan Metallurgical Plant.

During the forum, many participating companies exhibited their products to promote their CSR programs and achievements. In addition, the Association of Handicapped Persons displayed handmade craft produced by some of their constituents with disabilities.

One of the highlights of the Forum was the ceremony for joining the "Business Code of Conduct", developed by the Chamber to be followed by the business community of Mongolia. 30 company executives have pledged to adhere to the "Business Code of Conduct" in their actions, and have received certification for this. The representative from the General Customs Office has in turn pledged to support all of the companies that have joined into the "Business Code of Conduct" in their actions and services to businesses.

Business Code of Conduct:

We, the entrepreneur:

- **In appreciating the primary role and responsibility of the private sector in the advancement of Mongolia and the development of its economy;**
- **In recognizing the need to conduct businesses according to the internationally accepted rule of the game in a globalized world;**
- **In acknowledging the need to develop sustainable and transparent system of business relations based on fair and open competition have agreed to adhere to the following principles of the business code of conduct in business practice:**

1. Adhere to the domestic and international laws, comply with the correct business, financial and accounting reporting technical and technological regulations, and respect the lawful interests of the investors and consumers.

2. Recognize the rights of the parties to the business, perform the responsibilities before the consumers, partners and the local region in a sustainable manner, and contribute to the societal and economic development of Mongolia by strongly being conscious of the company's corporate social responsibility.

3. Conduct environmentally friendly business and production; appropriately utilize raw materials and natural resources, pay attention to the expansion of cleaner production, and re-sponsibly and creatively conduct environmental protection actions.

4. Implement an appropriate human resources policy, establish a healthy and safe working environment in compliance with the human rights and freedoms, and conduct operations taking into account the opinion and interests of all employees.

5. Correctly appraise and respect other's property, intellectual output, and valuables, abstain from using them illegally as well as achieve an effective and progressive development for the investors and society through a creative cooperation.

6. Implement the business confidentiality within the confines of the law, adhere to the principle of transparency in actions, disseminate a sufficient share of correct data and advertisements, and carry out actions based on justice by obtaining the trust of the consumers and partners.

7. Provide an opportunity for an equal and fair competition, abstain from resorting to illegal forms of competition, and abstain from any harmful actions.

8. Adhere to the universal principles of the international business relations, common ethical standards, participate on equal and fair footing, respect the national history, culture and traditions, develop mutually beneficial cooperation as well as abstain from conducting any activities that are contradictory to the reputation of the Mongolian business community.

9. Abstain from participating and avoid illegal activities including corruption, money laundering organized crimes, illegal drug and weapon trafficking and decisively fight against these types of crimes as well as resolve through peaceful means conflicts of interests.

The "Green Office" Movement:

The "Green Office" Movement is being implemented with the extensive participation of businesses on forth quarter of 2008. Golomt Bank, Khan Bank, MCS Group have been honored with the "Green Office Certificate" for their successful greening of office management.

The CSR survey 2009:

Surveying of members companies, the private sector and other stakeholders in Mongolia, found that there is a need for the Government to show support towards the promotion of further CSR. In particular, the businesses emphasized the need from the Government to improve the business climate, to provide for a fair competitive market environment, to reduce governmental bureaucracy and red tape, and to improve the implementation of related laws and legislation. The survey also found that now is the time to rid outdated ideas that CSR is only a money-donation activity. Furthermore, it revealed an expectation from businesses for the implementation of wide-ranging CSR activities by the MNCCI.

National Forum on Corporate Social Responsibility-2009:

The CSR Council, in cooperation with the UNDP Resident mission and MNCCI, successfully organized the Inaugural Mongolia National Forum on Corporate Social Re-sponsibility on 29 June 2009 at the MNCCI building premises. More than 150 companies participated at this Forum, with pioneers in CSR development like Xas Bank, Mobicom Corporation, Khan Bank, and Ivanhoe Mining Exploration Company presenting their CSR actions and experiences. Two companies (Golomt Bank and MCS Holding) have been honored with the "Excellence in CSR Award" in recognition of their successes in CSR actions. This forum was sponsored by Khan Bank.

GLOBAL COMPACT FOCAL POINT OF MONGOLIA

Introduction

The local network in Mongolia is called a Business Council for Sustainable Development of Mongolia (further- Network) by MNCCI. It is currently comprised of 42 companies, members of the UN Global Compact Initiative.

The mission of the Network is to promote the development of responsible business as a condition for sustainable development in Mongolia. The purpose of the National Network is to exchange knowledge, experience and innovations, organize joint learning forums, thereby improving business strategies and implementing joint projects for the benefit of society. Companies and organizations that believe in sustainable development and responsible business, respect human and labor rights of employees, protect the environment, disagree with corruption, take interest in the development of sustainable business strategies and civil society may become members of the Network after officially joining the UN Global Compact Initiative.

Organization

The focal point is situated at the office of The Mongolian National Chamber of Commerce and Industry. The organization was established in 1960, has acted as a 'quasi' government agency with limited initiatives and advocacy skills for 30 years. In 1992, it took the initiative to become an independent NGO, re-positioning itself and its services to become a leading voice and innovator of the private sector.

MNCCI's motto of 'less talk-more action' guides its activities, to ensure they are adding value to members and reflect the priorities and concerns of Mongolia's private sector, which

is largely comprised of SMEs. MNCCI members contribute over 80% of Mongolia's GDP. In its' mission to encourage, support and develop the private sector, MNCCI offers a comprehensive range of market-oriented services delivered across 18 departments and 18 provincial branch-chambers. They also have close and regular engagement with industry and government and provide leadership to 34 business sector councils.

The Chamber conducts wide range of activities including the rendering overall business services to its members and non-members, operating public-private sector counseling committees, arbitrating foreign trade disputes, inspecting export an import goods on a neutral basis, certifying foreign trade documentation, issuing bar codes, registering patents and trademarks, promoting exports, SMEs and CSR, organizing domestic and international exhibitions and trade fairs, sending and hosting business missions, exchanging business and investment information, promoting public relations with the media and member companies, conducting training, seminars and conferences, ranking TOP-100 companies on an annual basis, and conducting wide range of economic and business surveys such as the corruption index, business confidence index, red tape index and many more.

Participation

The Network is composed of 42 members (as of May 2009). Among the members are business companies (both national and multinational) from financial, insurance, telecommunications, textile, chemical and other industries, consultations and other sectors, business and professional associations, trade unions, academic institutions, NGOs and international organization. There are no government participants in the network, neither is any formal relationship with the Government. However,

occasionally the Network shares important documents with the Government (e.g. conclusions of the annual conference) and one of the Ministries mentions the list of GC members on its website acknowledging them as responsible companies.

"LET'S SAFE OUR TUUL RIVER" INITIATIVE

CALL FOR PUBLIC: LET'S SAFE the TUUL RIVER MORE EXPENCIVE than TAVAN TOLGOI (coal mining deposit)!

"Let's Save the Tuul River!" National Movement has been organized under the title "No water - No business" with the extensive participation of businesses on 17 May 2008. It was a public cleaning initiative of MNCCI, which resulted in the planting of 10,000 trees, and cleaning of about 10 tons of garbage in Tuul river basin.

The participants included the Parliament Speaker, Minister of Environment, Water Authority, MCS Group, Mobicom Corporation, Xas Bank, MIAT, Unigas Co., Ltd., "Prestige Food" Co., Ltd., Ekh Gazar Co., Ltd., and more. Following the event the Chamber signed a MOU on cooperation with the Water Authority for providing the necessary care, protection, watering of the trees planted during the "Let's Save the Tuul River" National Movement.

DREAM PARK –GREEN GENERATION

Dream Park is the eco-project initiated by MNCCI, Governor House of Bayangol district and city land office. This park, located on the territory of Bayngol districts 20th Khoroo with 58 hectare, aims to protect water sources, ecological balance to reduce city's dry condition and to set up green Park with world standard to enable citizens to have a good time in the Dream

Park. The project team today developed master plan of park using public objectively panting 55.000 trees, surrounded by 6,5 km fans, setting up electricity transmitting sub-station, watering system and it's pool and according to the master plan developed and implementing step by step working plan.

The park is planed to be open in 2012 and will be the first Mongolian Green Park.

History of Dream Park

The idea of Dream Park came firstly by initiatives of several residents of Bayangol district. In 2008 these well-motivated residents put the idea of Dream Park to the land office of Bayangol district, received land permission, and wrote the first draft project to the MNCCI. The MNCCI supported this project and became first funder of the project and planted first 5.000 trees by own cost. From 2009 the MNCCI signed agreement with Capital Land Office, Governor Office of Bayangol District to enlarge the activity of the project for the next 5 years.

Short introduction to the Dream Park - Welcome to Dream Park - an escape from a fast-paced world to a world of natural beauty and fun.

The Dream Park is contains following areas:

1. Recreation green area of 45 hectare
2. Culture area of 3 hectare
3. Sport area of 4,2 hectare
4. Pool area of 0,8 hectare
5. Administration and parking area of 5,3 hectare.

Recreation green area:

In the recreation green area, residents with their friends and family can spent weekends, vacation out in the fresh air like in the wild nature of Mongolia, enjoying beautiful view of flowers and trees, and have a rest. In this area for barbeque equipments,

pavilion, children playground, the hiking, Velo -and roller and skate track and roads will be constructed in length of 7 km and Ioga and other fields will be set up.

Sport area:

Citizens and youth will be able for more physical trainings and sport activities, change the sport attitude for higher level, develop sport arts and have a reasonable recreation and sport fields will be constructed.

Following sport areas are planned.

Soccer field

Baseball

Basketball court

Ice Hockey

Skate court

Climbing mountain

Tennis field

Beach volleyball

In the sport complex area are basketball, soccer, tennis and volleyball courts will be constructed.

Culture park:

To introduce Mongolian custom and culture to the local and foreign guests, to develop cultural sub-sectors through unique methods, to show artists performance and art the cultural centre will be constructed. Here open Estrada place, photo galleria and cultural Exhibitions area in the free and open theatre are planned. In this area public events, special events, graduation ceremonies will be held.

In the pool area nearby next to the fountain and on recreation benches the citizens can relax and enjoy beautiful view.

Dream Park –Land for future generation

There is existing international standard from National Recreation and Park Association and America's Park Administration that for every 1000 citizen it should be at least 2 hectare of recreation land or park. In the case of Mongolia it has only National Culture and Recreation Centre. In Ulaanbaatar there is a need for recreational park to spend free times. We wish YOUR SUPPORT to have an opportunity to work, leave and rest in healthy environment.

We are fighting with timing. The main thing is to build the Dream Park as possible in short time and introduce to the public. Attending In the Dream Parks SUPPORT PROGRAMME everyone will put their inputs in this wonderful achievement. From today you can choose a gift for next generation and for yourself too. Every gift for Dream Park will be used only with the purpose to establish Dream Park.

YES! Let's put your inputs to establish Dream Park. You have also several opportunities to add your inputs in the project.

- Help with a cash in the Cash account 210 00 781 of Khas Bank
- Support with furniture and other materials
- To be part of the programme Tree Forever and plant trees

We are grateful for any support and help. Welcome to the Supporter Team of beautiful ecological Dream Park.

LIFE FOREVER BEAUTIFUL - ORGANIC MONGOLIA

MICROLOANS DISBURSED TO THE POOR THROUGH A NEW REALITY TV SHOW

Name of project: "Life Forever Beautiful-Organic Mongolia"
Project implementation period:
September 2008 – August , 2010
Organizers: MNCCI, XacBank, Petrovis
Funders: XacBank, Petrovis, MNCCI
Broadcasting media: NTV

The Mongolian National Chamber of Commerce and Industry together with Petrovis LLC and XasBank are committed to support the Government policy on poverty reduction and the employment generation through implementing MNCCI's 2E approach as the empowering and entrepreneuring, enhancing and improving Corporate Social Responsibility principles among the business community.

With this aim and commitment in our mind and actions, we have established the "Together against Poverty" foundation to render loan to low income households and to provide them with an opportunity to immense their livelihood, have their own

businesses, we have organized the business reality TV show "Life Forever Beautiful" since 2008 broadcasted by Education Channel TV. The show has become a unique and efficient tool both in terms of transparency and openness to reach the target group and to motivate and empower the minds generates entrepreneurial ideas and actions among the micro and small business community, citizens.

As the second phase of this activity, in 2009 we are intending to start our micro lending program under the theme "Organic Mongolia" to support organic agriculture producers, farming communities at micro and small levels. Within the above-mentioned program, we will render loan up to 2.0-10.0 million Tugriks to functioning small and medium enterprises and to those who are going to run their own businesses. To date 150 million Tugriks has been contributed into the fund. The contribution amount to the foundation made by supporting organizations shall not be below 25.0 million Tugriks. Representatives from supporting organizations will be the member of Steering Committee.

The abovementioned organizations encourage individuals interested in participating in the show and receiving loans to complete the application process. Our judges will select the top 60 applications, and these finalists will receive an interview. Then, 40 individuals will continue on to attend a business class from which the final eight participants will be chosen.

Applicants must be willing to have their entire experience made public through TV broadcasting. The 32 contestants that attended the class but were not selected for the final eight, will be eligible to receive a loan, but will not participate in the filming of the reality show.

Eligibility Requirements:

- Applicants should not be salaried employees of any kind of organization, either state or private
- Application must not have any current outstanding loans from other individuals or organizations

Loan Amount: MNT 2 Million*

**This amount may be increased per the recommendation of a supervising party.*

Loan period: 3 - 12 months

Interest rate: 8-12 percent per annum

Collateral: The equipment bought with funds from the loan will be considered as collateral. There is no extra collateral requirement.

Repayment: The repayment schedule will be structured according to the participant's cash flow.

Loan application process:

- Application forms can be picked up at XacBank branches in Ulaanbaatar and also at national government Chamber offices. Completed applications should be returned to these same locations.
- The application period will be September 20th - October 1st until 5pm.

Contact Information:

MNCCI, Information Point (3rd floor)
Phone: 324394
XacBank
Phone: 1888-00

"GREEN CREDIT GUARANTEE FUND"

Why the Fund is called "Green Credit guarantee Fund"?

"Green investments" refers to the preventative reduction of environmental pollution by improving the efficiency of production processes and material consumption through technical measures. These measures are defined by the 'cleaner production' concept of UNIDO/UNEP and subsequently loans issued under this concept are called green credit/loans. Essentially, the Fund provision of supplement collateral guarantees defines its name: "Green Credit Guarantee Fund".

Key activities of the Fund

The Fund supports energy efficient and green investments or cleaner production initiatives by providing supplement collateral guarantee as an addition to material collateral assets for projects applied by professional energy efficient servicing companies and other companies and entities for banking loans. Additionally, the Fund conducts trainings on cleaner production, energy efficiency, finance and business matters with an aim to contribute to the development of energy efficient and environmentally friendly economy and society in Mongolia.

How to apply for a credit guarantee?

Energy efficiency and cleaner production oriented companies shall apply for supplement collateral guarantees according to the requirements set by the Fund Office and are required to provide relevant documents, such as the application, project document, technical and financial feasibility studies and appraisals etc. The technical appraisal shall be made by the Cleaner Production Center at MNCCI and financial appraisal is to be made by Golomt Bank.

Eligibility criteria for a supplement collateral guarantee approval:

- Applicant shall conduct energy efficiency or cleaner production oriented industrial activities, and have sufficient professional experiences and understanding of its technologies.
- Shall have certain self collateral assets to be pledged for a banking loan
- Shall have a good project document with positive appraisals made by Cleaner Production Center and Golomt Bank.
- Shall have no debts for banks, financial institutions, tax and social insurance authorities
- Shall have sufficient technical and human resources to implement the project

How a supplement collateral decision is to be passed?

Fund Office checks completeness of documents and review them according to its criteria. Based on the technical and financial appraisals, the Fund passes decisions on supplement collateral guarantee as an addition to self collateral guarantee as requested by Golomt Bank, within 5 working days upon submission of all required documents. The loan is issued through Golomt Bank, and maturity of the loan is up to 3 years with an annual interest rate of 16 percent. The Fund Office can guarantee a supplement collateral for 30-80 percent of a total loan amount.

How to monitor loan and project implementation?

Loan spending and repayments are monitored regularly by Golomt Bank and project implementation is monitored by Fund Office and Cleaner Production Center of MNCCI.

Required documents for credit guarantee approval:

1. Application letter requesting a supplement collateral guarantee /format shall be obtained from Fund Office/
2. Copy of state registration certificate (shall be proved by a notary/
3. Audited Financial statements for last 2 years
4. Certifying letter from relevant tax and social insurance authorities and bank
5. License for a business activity
6. Comprehensive Project document with technical and financial feasibility and business plan
7. Other relevant contracts/agreements
8. Ownership or co-ownership right documents of self collateral assets to be pledged for a banking loan
9. Photo of self collateral assets to be pledged for a banking loan
10. Energy performance contract for ESCO and supply contract for equipment to be purchased under a loan
11. Service fees to be paid in the account No 9131020548 at Golomt Bank:
    - Reviewing and undertaking technical appraisal of a project – 100 USD
    - Supplement collateral fee /1.5% of total amount of an approved supplement collateral guarantee/
12. Other materials required by the Fund Office

Formal acceptance or rejection of a project is informed to an applicant within 15 days after receiving the above-mentioned documents.

EC FUNDED PROJECT "CAPACITY BUILDING OF MONGOLIAN AND INNER MONGOLIAN (CHINESE) ENERGY SERVICE COMPANIES (ESCO)": INTRODUCTION, PROJECT ACTIVITIES AND ACHIEVEMENTS

Where energy in Mongolia and Inner Mongolia, as developing countries are concerned, various studies have indicated that efficiency in energy supply and end-use in the industrial sector is still only at one-half to two-thirds of that achieved with the benchmark best-practices applied in the industrialized nations. There are a number of clearly identified barriers to improve energy efficiency at the micro level. The major ones given below:

- High preference for channeling investment towards production related equipment and infrastructure. The cost of implementing energy efficiency is often perceived as daunting and difficult to justify in terms of return on investment, especially when energy tariffs are not conducive.
- Selection of oversized equipment to meet "worst-case" requirements, leading to inefficient part-loading.
- Preference for low-initial-cost options as against life-cycle costing for energy consuming equipment, often sacrificing energy efficiency. Low initial cost considerations also favor a proliferation of lower-efficiency, second-hand equipment, especially in SMEs.
- Aversion to risk of new technologies.
- Lack of technical knowledge amongst energy equipment buyers.
- Vendor sales pressure.

- Inadequate skills in operation and maintenance.
- Apprehension about energy supply and quality, especially in remote areas.
- Tendency to extend equipment service life by recycling or repair. This may save initial costs but leads to low energy efficiency when the quality of repair or recycling work is lower than that of original manufacture. Examples of areas where inefficiency can 'creep in' in this way are:
    - inefficiently rewound motors;
    - use of recycled lubricants and transformer oils;
    - use of reconditioned bearings;
    - impeller trimming carried out locally.

In order to develop a comprehensive and integrated approach, which targets the sustainable economic and environmental friendly development of the SMEs in industrial clusters the strategy and concept of ESCO service set up is suggested. In order to be able to execute the project several issues need to be addressed.

- o Effective energy management: Almost all the SME's do not have a position/team responsible for energy efficiency, lack of
- o Energy efficient techniques: Most of the energy consuming equipment being used are outdated and ineffective, limited information on modern equipment producers in Europe,
- o More and better skilled service providers: in Mongolia and Inner Mongolia limited number of potential ESCOs are capable of developing EE/ESCO projects,
- o Reliability of data; so far, little reliable data on energy efficiency equipment vendors, performance and methodology are available,

o Comprehensive Policies: the enforcement and impact of this Strategy concerning development of ESCO services remains limited,

Objectives

The overall objectives are:

- Reinforcing the private sector for a new ESCO business development opportunities
- Contribute to the gradual improvement of Mongolian and Inner Mongolian SMEs' production efficiency and environmental performance
- Contribute and promote the Asia Invest program in Mongolia
- To facilitate Asia wide principle of Asia Invest program

The specific objectives are:

- Enhancing foreign direct investment prospects
- Upgrading the capacity, skills and energy efficient equipment know-how of Mongolian and Inner Mongolian potential ESCOs through dissemination of information regarding energy efficiency, ESCO operations and performance
- The exchange of best practice in energy efficient techniques, ESCO operations, emphasis on the Project' relevance in facilitating EU-Mongolia and EU-Inner Mongolian trade relations and cooperation
- Creation of commercial and sustainable ESCO service
- Development and implementation of EE/ESCO projects

Actors and Donors

- Asia Invest
- Mongolian National Chamber of Commerce and Industry (MNCCI)
- Centric Austria International (CAI)
- China Council for the Promotion of International Trade, China Chamber of International - Commerce Inner Mongolia (CCPIT)

Description of activities

The series of workshops and trainings will contribute to the overall objective of the Project. 4 workshops, each lasting three days, will be performed in this phase in Mongolia and Inner-Mongolia. Each workshop day will cover a specific topic (see below). Participants in the workshops will be the technical and commercial managers of the selected potential ESCO companies.

Continuous coaching, selection and support of potential ESCO companies

"The potential" ESCOs, given specialized trainings on ECSO operations and introduced the first attractive commercial energy

efficiency options will engage in developing and implementation of ESCO projects. Some of them are expected to be applied for financing to Green Credit Guarantee Fund. Project Management Office will support them in project development, EPC negotiation and financing. The potential ESCOs and options identified at the clients will be advertised through esco.mn web site.

Information data base of MNCCI will serve the companies and potential ESCOs:

- To inform national and international agencies and technology providers of the technical and environmental performance (including energy) of selected industries or industry sectors in Mongolia,
- To inform national and international agencies and technology and service providers of the technology needs of selected industries or industry sectors in Mongolia,
- To inform industries, service providers and other bodies of the increasing emphasis on environmental protection and energy efficiency in Mongolia by providing information on standards, legislation and policies
- To increase awareness of the opportunities which may be provided by EE and CP technologies and ESCO services through the use of case studies and other information,
- To provide information which will assist industries and ESCO's to select EE and CP technologies which is appropriate to their economic and technical capabilities,
- To provide information which will assist industries and ESCO's to acquire that technology,
- To carry out technology matching of requests with technologies held on the database,
- To provide information on opportunities for investment to Financial Agencies,

- To provide a source of information that can be used in the production of newsletters and other publications,

In the course of the upgrading projects a progress seminar will be scheduled in order to exchange experiences, to evaluate the progress and actual support needs in order to eventually make realistic adjustments in upgrading targets in the framework (time and capacity) of this projects.

Internships of selected 12 ESCO companies (6-from Mongolia and 6-from Inner Mongolia) to European companies

One of the activities to strengthen the development of the ESCO's is the organization of internships will gain insight in the experiences of European organizations involved in energy efficiency services and subsequently strengthen their own organization. The objective of this output is to enable selected ESCOs staff to observe the operations of ESCOs or related organizations in Europe, to gain a better understanding about how the ESCOs or related organizations operate in practice. The total delegation will be 17 experts.

The selection criteria of participants will be made on mutual consent of the CAI and the MNCCI experts based on number of EPC based ESCO projects implemented and other requirements such as execution of pilot projects, participation in the workshops, development of feasibility study of options, exhibition of best case studies in the web etc. In case of Mongolia, the companies which have already visited the Netherlands within New-21 Project will not be selected for internships to European companies. MNCCI is responsible for selection of Mongolian ESCO companies for internship to Europe and CCPIT responsible for selection of Inner Mongolian companies. The programme and visit will be prepared and guided by CAI experts.

Dissemination gained during internships to other companies

The workshops in Mongolia and Inner Mongolia will be organized for dissemination of experiences and know how of European companies attended.

Evaluation of achieved results of participating companies

Participating companies have to report periodically their activities and achievements to MNCCI and CCPIT accordingly. The participating companies will be evaluated through different questionnaires too.

Dissemination of project information and results via the Internet in English and Mongolian

The existing internet site esco.mn in Mongolian will be upgraded and the English version developed.

Some achievements of Mongolian ESCO companies

The summary of savings achieved by Mongolian ESCO (Energy service companies) is shows following in the year 2008:

Energy efficiency- 850 million Tugriks, electricity-374.606 kWh, heat-15900 Gkal , coal-960 ton

MONRE CO.LTD

Monre Co.Ltd is only Mongolia produces energy efficient lightening in the country. The factory was established in 2006 and has capacity to produce 900 peaces of lamp per 2 hours. In factory are working 28 employees using Mongolian and Taiwanese technology.

Economy for Customer

Description	Incandescent bulb	"Great Spark" energy saving lamp
Wattage	100 Watt	20 Watt
Lifetime	1000 hours	8000 hours
Consumption of electricity per 8000 hours	100Watt x 1000 kWt/h x 8 = 800 kWt/h	20 Watt x 8000 kWt/h = 160 kWt/h
Price of electricity 1 kWt=74.8₮ (including VAT)	74.8 x 800 kWt/ h=59840₮	74.8 x 160 kWt/ h=11968
Price of lamp (₮)	500 x 8 = 4000 ₮	5000 ₮
Total cost (₮)	59840₮ + 4000₮ =63840₮	11968₮ + 5000₮ = 16968₮
ECONOMY (₮)	63840₮-16968₮= 46872₮ 46872 ₮/3= 15624₮ / per year/	

The company sold in 2008 127.000 pcs x 15624 ₮ = 1.984.248000 ₮ (total economy per year)

The companies brand product "Great Spark" in comparison with normal incandescent bulb saves 80% electricity, operates 8 times longer, illuminates 5 times more and has no CFC (Chloro-Fluoro-Carbon) using low heat and pollution. In 2008 the company provided services for energy savings in amount of 609 million Tugriks.

DORNIIN ILCH CO. LTD

Complete installation of efficient boilers and separation of oxygen from air and installation of deairator first time in small scale boilers. Also newly implemented the new methods of coal breaking, transportation and ash separation. Saved energy in amount of 66.2 million Tugriks and 960 ton of coal.

ZUUNNAIMAN SUVRAGA CO.LTD

The company started to import high quality energy efficient technology from worldwide well-known producers such as Oventrop, Kermi, Wilo, Reflex, Viesmann, Stiebel Eltron, Kaimann, Kampmann and many other since 1996 to current day. From this time company provided large ESCO services to the Governmental Hose, Mongol Bank, Golomt Bank, World Bank, Erdenet Mining and etc. The total amount of provided energy service was around 1.7 million USD.

ENERCO CO.LTD

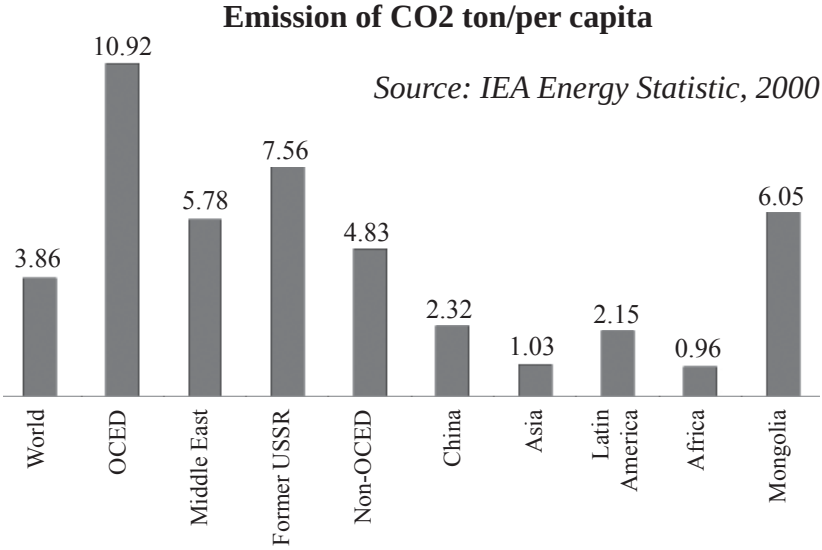
Energy Saving and heat supply company Enerco 2001-2007 acted in the New-21 project of Chamber and Royal Embassy of the Netherlands in Beijing as regional advising company and was registered as ESCO company in 2004. Until nowadays, implementing domestic and foreign projects of energy savings and audits. Total energy savings in 2008

CDM IN MONGOLIA

Introduction

The Government of Mongolia signed the UNFCCC on June 12, 1992 at the Rio Summit and the Great Khural (Parliament) of Mongolia ratified it on September 30, 1993. The Government of Mongolia ratified the Kyoto Protocol on 15 December 1999.

Recent studies indicate that Mongolia has one of the largest emissions of CO2 per capita in the world with around 6 tons in 2000 and between 9 to 10 tons of CO2/capita latest years, and has a large potential for low cost reductions of CO2 emission and other GHG emissions. These factors make Mongolia an attractive host country for CDM projects and CDM precursors like the CO2 emission reduction tenders managed by Senter in the Netherlands. [1]



CDM

CDM (Clean development Mechanism) is related to the climate change discussion and the Kyoto Protocol. The Kyoto Protocol obliges countries that historically have had high emissions of greenhouse gases and that have a relatively high income (the so-called Annex I countries) to reduce emissions of 6 greenhouse gases, the most important of which is CO2.

Obliging with the Kyoto Protocol is going to be costly for the Annex I countries. To reduce costs, the Kyoto Protocol offers various "flexible mechanisms". CDM is one of these flexible mechanisms. It offers an Annex I country (the investor country) the opportunity to finance CDM projects in a non-Annex I country (the host country). These CDM projects should result in

[1] The Netherlands is financing GHG emission reduction projects through tenders managed by Senter in the hope that these project will at a later stage be accepted as CDM projects

a reduction in GHG emissions in the host country, which can be used by the investor country to fulfill its obligations under the Kyoto Protocol. The financial contribution is likely to be in a contractually fixed amount of US$ per ton of CO2 eq. emissions reduction.[2]

The exact modalities of CDM are not yet fixed, and need to be determined by the Conference of Parties (COP) of the United Nations Framework Convention on Climate Change, acting as the Meeting of Parties (MOP) to the Kyoto Protocol (COP/MOP). Key requirements on which already consensus has been achieved are:

1. The GHG emission reductions would not have occurred without the CDM financing of the project;
2. The project should be recognized by the governments of both the host and investor country as a CDM project. From the perspective of the host country (Mongolia in this case) this means that the project will need to contribute to the sustainable development of Mongolia – have favorable environmental, social (employment generation, poverty alleviation) and economic impacts;
3. The financing for CDM projects should be additional to the ODA financing.

From the Mongolian perspective, CDM is attractive because of its likely contribution to the economic development of Mongolia, its contribution to the environment, and its contribution to poverty alleviation.

[2] Reductions of other greenhouse gases are converted to a CO2 equivalent through the use of so-called global warming potentials, which reflect the relative contribution of 1 ton of each greenhouse gas to global warming.

A conservative calculation of Mongolia's potential for the export of CO2 credits shows that Mongolia could have CO2 credit exports exceeding 10 million US$/year in value, which means that CO2 credits have the potential of becoming one of the major export products of Mongolia.[3] Perhaps more interestingly, CDM could increase the growth rate of GDP in Mongolia by 0.5% (e.g. from 4% to 4.5% per year). This would indirectly contribute to poverty alleviation through trickle down impacts.

The direct poverty alleviation impacts can also be expected to be high: for example, CDM could be used to improve heating (directly through more efficient stoves, indirectly isolation) within those households in the Mongolian society that cannot afford these expenditures themselves.

Mongolia faces competition as CDM-host

Mongolia is not the only potential host country for CDM projects. All countries that are not part of Annex I and that become Parties to the Kyoto protocol can ask as host countries. This literally implies that Mongolia will have more than 100 competitor countries.

Countries will compete for CDM projects in terms of a number of factors, including two factors they hardly can affect in the short run: (1) their GHG mitigation potential and (2) the costs of GHG mitigation. In terms of these two factors Mongolia

[3] This corresponds to 3 million tons of CO2 equivalent at an average price of US$ 3.33/ton. This is about half of the commercially viable emission reduction potential at a cost of 5US$ /ton CO2 equivalent. Not included are possibilities to build windparks in Mongolia for power generation, and exporting power to other countries (China, Russia) – if this were included the potential would be much larger.

is relatively well endowed. The mitigation potential is relatively large, and the mitigation cost is relatively low. But note that all countries will have some low cost GHG mitigation potential, so in the end this is not a decisive advantage.

Countries will also compete in terms of their *approval procedures.* Since preparations of bids for CDM tenders requires a lot of time input and is quite costly, developers of CDM projects are likely to favor host countries in which the approval process is transparent, fair, predictable and fast. This is an important factor that will determine what countries will benefit most from CDM financing. It is also a factor that can be influenced by judicious interventions.

A last factor that will determine the competitive advantage of a country for CDM projects is the *private sector understanding and awareness* of CDM projects. With a larger awareness in the private sector, more private enterprises will seek CDM financing; with larger capacities in the private sector, more parties will be able to identify, design, develop, market and implement CDM projects.

The present project proposal seeks to develop the capacity for CDM projects in Mongolia by addressing the last two groups of factors affecting competitive advantage for CDM projects in Mongolia.

Greenhouse Gas Mitigation Potentials and CDM Opportunities in Mongolia

The National Action Program on Climate Change (NAPCC) was approved on 19 July 2001 by the Government of Mongolia.

The National Action Program on Climate Change comprises an overview of:

- Impact assessment, possible adaptation measures,
- GHGs emission inventories and its projections,
- GHGs mitigation measures, and
- Response measures' implementation strategies.

Implementation of the NAPCC focuses on:

- Detailed impact, vulnerability and adaptation assessment
- Updated GHG inventory
- Development and Implementation of GHG mitigation measures

DNA of Mongolia

- DNA of Mongolia was established on 18th November, 2004 under the MoE and it has been officially registered to secretariat of UNCCFC.
- Since 2006 the Sustainable Development Strategy and Planning Department of MoE took over the duty of DNA and acting as DNA.
- DNA will serve to receive, evaluate, support, register, decline project proposals and provide with official documents, establish working team and committees and develop regulations and criteria for project evaluation.

The proposed project

The proposed project would have two component, that both work towards the objective of increasing Mongolia's competitiveness for CDM projects:

1. Capacity building at the private sector level

This component has as its objective to increase the capacity to identify, design, formulate and develop suitable candidate

projects - to fulfill the requirements of tendering organizations like Senter, and to fulfill CDM requirements. In addition, this component would increase the awareness of CDM potential for project financing purposes.

2. Capacity building at the government level

This component has as its objective to assist Mongolia in the development of approval procedures that are fast, fair, transparent and predictable, and which do not impose unnecessary costs on the CDM project developer. It has two subcomponents: project approval procedures and project priority.

Project approval procedures

Eventually, the government of Mongolia needs to approve any project before it can be used by Annex I countries to comply with Kyoto obligations, so it would be in the interest of Mongolia to have a clear decision procedure on CDM projects, and clear procedural steps that should be taken to get GOM approval of potential CDM projects. Mongolia will be competing with other countries to be a host for CDM projects, and sound and speedy approval procedures will give Mongolia a competitive edge.

The (Mongolian internal) review of potential projects should focus on:

- Compliance with internationally agreed upon CDM rules. This will also be checked internationally, so this does not need to be a major worry for GOM. Still, if Mongolia would consistently support ineligible CDM projects it would spoil its market for CDM projects, so this is something to be concerned about.
- Compliance with Mongolian goals/objectives for sustainable development. The Mongolian government needs to make

sure that the projects proposed contribute to its sustainable development. Probably on the basis of guidelines, checking the local environmental, social and economic impacts.

It would be very useful if the Netherlands could help Mongolia assist in developing an approval procedure that is fast and transparent. At this point it is difficult to envisage the exact content of this sub-component, but one could for example think of training of a number of qualified CDM review consultants in the private sector that could be hired to advise on proposed projects, combined with the design of an approval procedure.

In terms of the approval procedure, one could think of a process involving a project concept note submitted at an early stage, which in very brief terms describes the project. On the basis of the concept note, a preliminary advise could be given which would help the developers evaluate the likelihood of approval of the full proposal – the developers can hence avoid the costs of developing a project with a low likelihood of succeeding. Of course, this is just one element of such an approval procedure to give some preliminary ideas.

It would also be beneficial if some development of a quality system and quality certification for these reviewers and the whole approval procedure could be included in the sub-component; this would add credibility for outside investors. Speed could be included as quality criterion (maximum delays in various stages could be defined).

Project priority.

Project priority is related to the idea above: if Mongolia can pre-identify project types that would satisfy its sustainable development objectives, CDM projects of these types could be FAST-TRACKED in the approval procedure.

In terms of the project concept note idea described above, one could envisage that all projects of a certain prioritized type would automatically and more speedily get the most favorable rating for the project concept note; moreover, the project concept note could be very short, only demonstrating that the project described is of the prioritized type.

Reasons for requesting donor funding

The project described above would be very useful for Mongolia. It would make it possible for Mongolia to fully utilize the possibilities opened by CDM funding. It would also – through the increased inflow of CDM project – have a major impact on poverty alleviation in Mongolia, and contribute to economic growth.

However, Mongolia itself lacks the finance to conduct this project on its own. Moreover, Mongolia lacks the in-depth knowledge on CDM that is necessary for this project. Therefore, it seeks funding from the donor community. The Netherlands is the most logical candidate to ask for funding for this project, because:

1. Successful Netherlands-Mongolian development cooperation project carried out in the recent past;
2. The celebration of 30 years of Netherlands-Mongolian diplomatic ties;
3. The Netherlands development cooperation policy has singled out CDM capacity building as an important focus;
4. The Netherlands has taken early action to develop a tender procedure for CO2 credits. The Netherlands is the only country that we know of that is currently already opening tenders for the procurement of GHG emission reduction;
5. The Netherlands has many experts on CDM issues;

6. The Netherlands has initiated another project in Mongolia, NEW21 that would benefit from and contribute to this project.

Counterpart organizations

There are several private sector organizations and government organizations that could be considered stakeholders in this proposed project:

Private sector

- Mongolian Chamber of Commerce and Industry
- Major consulting companies
- Industry associations
- Major private sector companies

Government organizations

- MFE (Ministry of Finance and Economy) – responsible for donor coordination
- MIC (Ministry of Infrastructure and Construction) – responsible for energy related issues
- MFALI (Ministry of Food, Agriculture and Light Industry) – responsible for industrial development in Mongolia
- MoET (Ministry of Environment and Tourism) – responsible for climate change issues
- ERA (Energy Regulatory Authority) – responsible for the implementation of energy policy

Poverty alleviation impacts

The CDM capacity building project will make it possible for Mongolia to benefit more from CDM financing. It would help Mongolia to attract more CDM projects and other direct funding

for CO2 emission reduction projects (Senter tender, American companies interested in CO2 emission credits to satisfy the multi-pollutant legislation in the USA, that is likely to also cover CO2).

A conservative assumption is that with the CDM capacity building project Mongolia would sell 3 million tons of CO2 credits/year, and without the CDM capacity building project 1.5 million tons of CO2 credits. This is a reasonable assumption: without the project, Mongolia's position to attract CDM funding would be relatively poor. In the current CERUPT tender of Senter, Mongolia only offers 10,000 tons/year. However, the Netherlands funded climate change study has shown that Mongolia has a considerable potential for CDM projects; 3 million tons corresponds to about half the identified potential available at 5 US$/ton. This estimate is only based on Mongolia's own energy consumption: projects in which it would export power from renewables to other countries could contribute significantly, and have not been included.

The impacts of CDM on poverty alleviation are twofold: direct (the direct poverty alleviation impacts of the projects financed) and indirect (through economic growth). Combining this with the conservative estimate on the impact of a CDM capacity building project on the sale of CO2 credits, we can estimate the poverty alleviation impacts of a CDM capacity building project in Mongolia:

Direct impacts:

The direct impact of the CDM capacity building project is to increase the number of CDM projects. Each of these CDM projects will have largely positive impacts on poverty alleviation,

for example through:

- Better access to electricity for poor people. For example, sum centers and aimags may operate more efficient generators, and/or wind and solar-based generators, all funded through CDM projects. Better access to electricity means more opportunities for income earning activities in the evening (and also eases life in other ways)
- Better isolation of buildings (funded through CDM), resulting in less cold related health problems
- Better efficiency household stoves (funded through CDM) will lead to lower costs of heating for the rural poor, and to less indoor pollution
- Reduced adverse health impacts of pollution resulting from the burning of coal
- More competitive industrial enterprises (reduced energy costs through energy efficiency projects in industrial enterprises)

It is not possible to quantify the direct impacts, since these will depend on the type of projects that will be funded through CDM, something that is hard to predict. However, the direct poverty alleviation impacts of the projects could be one of the approval criteria, and projects with a large poverty alleviation potential could be fast-tracked. The direct impacts are therefore likely to be considerable, and to consist of both more CDM-funding, and a shift of CDM funding to projects with a larger poverty alleviation impact.

Indirect impacts:

The CDM capacity building project would lead to an additional 0.25% annual growth of GDP. Normally, 1% GDP growth leads to about a 0.6% decrease in poverty incidence;

hence a 0.15% decrease in poverty per year as result of the CDM capacity building project. Little over 1/3 of the Mongolian population of 2.4 million people lives below the national poverty line; this is about 850,000 people. This means that the indirect impacts of the CDM capacity building project will lift about 1300 people/year out of poverty.

Since the period in which CO2 credits would be sold would last until at least 2012, the total accumulated indirect impacts of the CDM capacity building project on poverty alleviation would be 13000 people lifted above the poverty line.

The reason that the costs to eliminate poverty in these projects are so low is that a relatively small development cooperation investment will make it possible for Mongolia to attract substantial funding on a purely commercial basis.

II. CLEANER PRODUCTION

SUSTAINABLE DEVELOPMENT: A NEW SUSTAINABLE PRODUCTION AND CONSUMPTION DEPARTMENT ESTABLISHED

Mission and Objectives

Mission:

To promote the development of environmentally friendly and economically efficient industries and services in Mongolia by introducing and implementing Cleaner Production principles, in a contribution to Mongolia's sustainable development.

Objectives:

- To introduce and implement Cleaner production principles into Mongolia's industrial and service' sectors,
- To create a favorable legal environment for developing Cleaner production in Mongolia,
- To develop collaborative partnerships with domestic and international organizations in order to undertake joint projects and programs,
- To create a favorable legal and financial environment for the development of energy efficiency improvements and ESCO business in Mongolia,
- To facilitate investment mechanism development towards Cleaner production and ESCO in Mongolia.

Services:

Cleaner production:

- Training managers across all levels and sectors in CP principles and efficiencies,
- Consulting to industry on Cleaner production assessment methodology,
- Raising awareness of the importance of Cleaner production,
- Implementing projects to introduce Cleaner production applications across Mongolian industry.

Energy Efficiency/ESCO:

- Conducting energy audits to identify potential energy savings,
- Undertaking specialized training on energy efficiency and ESCO services,

- Introducing Energy management systems into companies,
- Developing and implementing projects focused on increasing energy efficiencies,
- Consulting on energy efficiency options,
- Conducting technical assessment on energy efficiency projects,
- Raising awareness of ESCO services: www.esco.mn web site

Cooperation with GTZ

MNCCI tightly working with GTZ (German Technical Cooperation) and among them the department too. Starting from 2008 the department implemented and implementing several activities with GTZ to improve environmental aspects of the production in the countryside. In the first phase some trainings on energy efficiency was conducted in several provinces for the SME's. As a result

Concept and criteria of the competition
"Introduction of eco-friendly, efficient production methods and technology" to be conducted among micro, small and medium size enterprises in Uliastai, Darkhan-Uul and Erdenet regions

1. Overall objective:

1.1 Raise environmental responsibility among micro, small and medium size entreprenewers in the regions,

1.2 Introduce internationally recognized concept and principles for efficient/ rational use of natural resources, pollution reduction and prevention,

1.3 Introduce principles of cleaner production,

1.4 Identify and implement options/ possibilities for improving environmental performance of the enterprises, including for improving water use and energy efficiency,

2. Eligible entities:

2.1 The enterprises of the next sectors being involved in the "Component 1- Promotion of SME and cooperatives" activities of "The programme Regional Economic Development in Mongolia" of GTZ in Uliastai, Darkhan-Uul and Erdenet regions are eligible to participate in the called competition:

- Wool processing
- Wood processing
- Leather tanning/processing

2.2 The entities (companies, cooperatives, partnerships) defined in 2.1 sectors and entrepreneurs officially registered in the Tax Office only are eligible for participation.

3. Duration: April 13 2009 till October 13, 2009.

4. Terms/indicators:

A. Increase of natural resources use efficiency (Improvement in energy, water and material use efficiency, reuse/ recycling of water, energy and waste),

B. Reduction of waste and pollution, introduction of pollution prevention measures (reduction of solid waste, effluent, air emission and soil contamination, introduction of cleaner production)

5. Evaluation procedure:

5.1 Evaluation Committee, consisting of 6 members (MNCCI-1, Governor;s Office-2, regional CCI-1, GTZ-2) will be assigned before April 8th.

5.2 Application letter should be submitted to regional CCIs in written form before April 23d with attached filled in "The current environmental performance"

5.3 Evaluation Committee members from Regional CCI, Governor's offices of provinces and Regional GTZ offices conduct site visits before April 30th for evaluation and confirmation of "The current environmental performance". (walkthrough at site, take photos, ask opinions from local organizations and people, use of available statistic and inspection reports - all have to be recorded).

5.4 Monitoring and assistance:

A. Evaluation Committee members from Regional CCI, Governor's offices of provinces and Regional GTZ offices in May and August, Evaluation Committee members from MNCCI, GTZ and Governor's offices of the provinces in July will conduct site visits for monitoring, identifying and documentation of achievements and assistance

B. Evaluation Committee members from MNCCI, GTZ and Governor's offices of the provinces will conduct site visits before October 10 for the final evaluation.

5.5 Participants will submit reports to the Evaluation Committee/ Regional CCI before October 17th.

5.6 The evaluation Committee evaluates the achievements and awards prizes before October 24th.

5.7 Evaluation should be done by each of terms/ indicators identified in Paragraph 4 using indicators according to Annex 2. Every comparative indicator can be scored (0-5) by the evaluator and the sum of scores assigned by 6 evaluators from the Evaluation Committee according to Paragraph 4 would be the base for awarding.

If the Participant does not fulfill “The compulsory requirements” identified in Annex 2, those will be rejected to be awarded.

6. Awards:

1st prize (2): Participation in the Internship mission to the Netherlands.(GTZ)

2nd prize (2): Facilitate loan disbursement from provincial Fund for SMEs development (10 milion Tugric, for 2 years, 1% interest rate) (Governor's Office)

3d prize (2): "Mini library for entrepreunership" (series of 25 business books), free of charge adtvertising in "Business times" newspaper (MNCCI)

Note: 1 business service provider from each of regions which involved as more as possible entreprises from value added chain in the Competion and built own capacity for dissemination of environmentally responsible business principles will be awarded participation in the Internship mission to the Netherlands.

EC FUNDED PROJECT "ECOPROFIT FOR SUSTAINABLE MONGOLIAN ENTREPRENEURSHIP".

Introduction.

The aim of this specific project was to train and upgrade technical and commercial skills within the industry of Mongolian businesses. A number of representative enterprises from the tanning, food processing, textile and tourism sectors were engaged for coaching in respect of sustainability orientated management practices and the ECOPROFIT approach. This approach leads to improvements of the environmental as well as the economic performance of the targeted enterprises

and to a common understanding of the European Model of environmental and economic management standards. To sustain these activities a number of Mongolian consultants were trained by European Cleaner Production consultants thereby enabling them to replicate these services in the future. In addition an ECOPROFIT cluster will be established to promote sustainable development through an association of Mongolian businesses. This marks the official finish of a more than two years lasting intensive exchange on expert level between Mongolia, which is the second largest landlocked country of the world, and two of the smallest countries in Europe, Austria and Ireland. What ties such different countries and different cultures together? It is the global interest to develop business in mutual benefit and the global responsibility to enable such development in a sustainable way. "ECOPROFIT for Sustainable Mongolian Entrepreneurship" is the adequate expression for this mission by addressing the economical, environmental and social milieu at the same time and balance these aspects into a sustainable harmony, as far it is possible. Mongolia's economy is traditionally based on agriculture and mining, but every day new businesses from the industrial, commercial and service sectors are established. These enterprises, most of them SMEs, are the backbone for the country's transition to modernization and social market economy. They are operated by clever and motivated entrepreneurs, who are keen to close the gap to European and other advances economies. Although this project could provide only a small contribution in this respect, the achieved results on company level are promising. We are glad to present with this brochure a number of success stories and show cases, which might stimulate others to follow up. Project Leader Gerhard Weihs expresses his gratefulness in first instance to new Mongolian ECOPROFIT companies and their staff members and experts, who have been the biggest asset

of this project. He thanks the European Union for co-funding this project as well as the Austria Development Programme for further financial support. Very grateful for their excellent work and expertise he is personally to our EU experts Colum Gibson from our Irish partner, the Clean Technology Centre of Cork, and Wolfgang Weissel from CAI. Finally he thanks the Mongolian National Chamber of Commerce and Industry and their project team as his partner in the project. He wishes MNCCI all the best that the make the best use of the gained experience and capacity to continue providing and enhancing such services to their clientele, the growing numbers of SMEs in Mongolia.

Project activities and achievements

Summary of the project activities

From understanding to implementation, the project provided a number of logically combined training, consulting and assessment activities:

- Instruction training for Mongolian consultants,
- 4 workshops each for 3 days followed by company visits to implement the first time cleaner production in the selected industries,
- Technology assessment followed by a business match making mission to EU
- Set up of an Ecoprofit Cluster in Mongolia to sustain the activity
- Evaluation and audit of achieved results honored by a final certification of successful participating companies and consultants
- Saving project experiences in a guideline owned by the MNCCI to ease replication

The topics covered by the trainings and workshops:

- Cleaner production assessment tools and techniques,
- Sustainable entrepreneurship issues: energy management, waste management, environmental management, CSR, OHSAS,HACCP and eco-labels,
- Product innovation,
- Communication skills,
- indicators-metric

Each of workshops followed by the coaching, on site visits and assistance of EU and MNCCI experts for providing:

- data analysis and CP option generation,
- material flow analysis,
- technology assessment and others,
- set up environmental teams and policy.

Summary of the project achievements

- Cleaner production investment of the factories reached 150 thousand Euro,
- Up to date economic benefits accounted 111 thousand Euro,
- Reduction of water use by 20%,
- Reduction of energy use by 25%,
- Reduction of solid waste by 30%
- Increase of production efficiency,
- Set up of capacity for cleaner production,
- Set up of information data base for cleaner production issues,
- The companies which met the Checklist requirements and included in this brochure are awarded “The International

Green Certificate" for actual improvements and results during the project life time,

- 4 Mongolian experts awarded Certificate "Cleaner production expert-trainer",
- Set up of an Ecoprofit Cluster in Mongolia to sustain the activity.

Summary of the project achievements

PROJECT IMPACTS AREAS OF REDUCTION	INPUTS				OUTPUTS				
	Water	Energy	Packaging	Material inputs	Emissions to air	Emissions to water	Waste water	Greenhouse gases	Solid waste
Apu Brewery	⇧	⇧				⇧	⇧	⇧	⇧
Bio-Combinat		⇧	⇧	⇧	⇧	⇧	⇧	⇧	
Suu Dairy	⇧	⇧	⇧	⇧		⇧	⇧		⇧
Darkhan Tannery	⇧	⇧		⇧		⇧	⇧		⇧
Montulga Leather		⇧	⇧		⇧			⇧	⇧
Khatansuikh Impex	⇧	⇧				⇧	⇧		⇧
Gobi Cashmere	⇧	⇧		⇧		⇧	⇧		⇧

CASE STUDIES

APU Brewery

APU company is one of the largest companies in Mongolia. They manufacture multiple forms of alcohol products, soft drinks and bottled mineral water with an annual output of 20 million litres. APU was established in 1924 as a state enterprise and privatized

in November 2001. Since then APU has been a leading national manufacturer of high quality of vodka, whisky, beer, wine, soft drinks, water and milk.

During the programme they identified energy and water as their major areas for potential improvement. In addition to installing water meters, which allowed more control over their process flows, they also used these to introduce an innovative internal benchmarking system. This compared water use during different shifts and encouraged a mentality of continual improvement between the different shift groups.

Participation Outline

1. Attended the Project workshops to receive CP tools
2. Development of flow charts and I/O analysis
3. Identifying of CP options
4. Development of indicators, set up of targets and internal norms
5. Identifying of CP options for reducing waste and recycling for each of workshops

Options	Identified	Applied
Steam, Water and Electricity Saving	16	12
Better Use of the raw materials and auxiliaries; reduction of the waste	12	12

Project implementation phase

- Comparison of I/O balances for 1st quarter of 2008 with 2007 overall figures and analyze efficiency indicators.
- Evaluation of economic and environmental benefits of implemented CP options.
- Waste reduction analysis

Environmental Policy

- Accept and cooperate with suppliers and companies implementing environmental policy
- Environmental concern is a priority in decision making for investment,
- Optimal usage of natural resources and reduction of environmental impacts,
- Get certified for ISO 14001 Environmental Management System,

Summary of CP Options

Results

2007 Improvements	
Water Usage	53.26 %
Steam Usage	14.58 %
Electricity Usage	15.21 %

The savings resulted in coming close to the European Benchmark Indicators

Future Options

Continue the options under implementation

- Reduction of the bottle cleaning unit
- Recycling of beer sludge for animal feeding in summer time will be increased from 46.6% to 100 %
- Waste chaff recycling 70%-100 %

Planned activities

- Environmental policy as a key for company management
- Selection of the green supplier
- Optimal usage of natural resources
- Establishment of targets

- Introduction of waste management system

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GOBI SHC

The " Gobi" cashmere and camel wool Share Holding Company was established in 1981 with Japanese investment. The company production capacity per year is: 60 tonnes of rounded cashmere, 360 tonnes of scoured cashmere, 350 thousand pieces and 153 thousand meters of knitted products. They currently export to 130 companies from 30 countries in Europe, Asia and America.

The Gobi company is the first in Mongolia certified to total quality management ISO 9001 standards.

The company was awarded the "Global Qualify Management" Certificate issued by the International Organization for Standardization and "Golden Europe Award for Quality and Commercial Prestige".

New Energy efficient equipment that has been installed

Participation Outline

1. Attended the Project
2. Established a green stem to develop process flow maps and machinery inventory
3. Team identified CP options
4. Quantified CP option costs
5. Implementation of various options

Based on much of the material and information from the workshops Gobi's green team identified the following as areas for detailed examination:

- Water use
- Steam use
- Waste generation
- Review of machinery and technology

No/low cost improvement options implemented

- Waste metal was collected and sold.
- Water meters have been installed at 8 workshops and processes with high water consumption to control the water usage.
- Trimming waste reused to produce new products like blanket and pillow.
- Washing water used in 1st step of washing to save water.
- Cooling water from dying machine was reused,
- New steam generators installed at steam irons

Results

Of the 44 options identified 50% were implemented. The Environmental savings were:

- Water use decreased by 10%
- Energy use decreased by 8%
- Waste generation reduced by 30%

The economic savings were 150 million tugrik with an associated improvement in product quality and an improvement in the company's image on the market.

Future Options

To sustain the cleaner production the company management is planning to conduct cleaner production assessment in other focus areas in close cooperation with MNCCI CP and EE Centre.

Through the programme they have also been assisted in their application for the prestigious OkoTex award which is an eco-label for environmentally motivated textile companies.

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MONTULGA Co.Ltd

МОНТУЛГА ХХК

Montulga Co., Ltd. is one of the leading producers of leather souvenirs. With 3 branches and more than 100 employees the company produces 12 types of end-products with over 500 different designs using sheep skins, goat skins and cow hides.

60% of the company products goes to domestic market and 30% of them is being exported to the EU and Asian countries. The company awarded by International Management Society, located in Spain, as "Company with best Management", the

products received "New Millennium Award". The company is actively participating in exhibitions held in Moscow, Tokyo, Seoul, Ulan-Ud and Khukh-Khot.

Actions undertaken and main project activities.

- Cleaner Production team was established with 4 members led by the general manager.
- The company management approved CP assessment plan developed by the CP team,
- The CP team did Input/output analysis and following international Guides identified the focus areas as following:
    - Energy,
    - Air quality, working environment,
    - Waste from packaging,
    - Occupational Health and Safety

A CP assessment plan, including activities for identifying flow charts, Input/output analysis, comparative indicators and CP options, has been implemented successfully Company environmental policy and future tasks for sustaining CP set up.

Description of some CP options implemented

- 80% increase of eco friendly reused paper packaging instead of plastic packaging,
- Purchase of a special packaging machinery to reduce packaging cost by 20%,
- Automation of air ventilation system of workshops,
- Separation of dye fixation unit from the workshop,

Special planned measures to improve occupational health and safety

Summary Of CP Options

Results

In the framework of the Project activities the company management has invested 24 million Tugrik. Of this 63% was invested into new technology and 27% for new product development. As a result of the project implementation the company achieved economic and environmental benefits:

- Economic benefit reached 2,3 million Tugrik,
- Energy consumption reduced by 20%,
- Solid waste disposal reduced by 90%,
- Working environment has been improved due to air quality improvement

These are new products that are now made from previously classified scrap material. This has contributed to waste reduction of 90%!!

Future Plans

This company has a very progressive outlook on sustainability and as part of their policy intend to pursue a proactive goal of sustainability and its local implications. They are in the process of implementing ISO 0991 and aim to use this EcoProfit programme to assist their work towards the international system "Ecologically pure product".

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DARKHAN Tannery

Darkhan Nekhii is the biggest sheepskin tannery and garment manufacturer in Mongolia. It was established in 1972 with Bulgarian technical and economical assistance and is located in Darkhan, the second largest city of Mongolia. The designed capacity of the tannery was to process 0,7-0,8 million sheepskins per year. This was substantially expanded in 1984 to a capacity of 1,5 million sheepskins per year. In the same complex, a sheepskin garment factory has been constructed which produces a variety of clothing products for domestic and export markets. The main products are semi and finished sheepskins like wet-blue, crust, double face, nappalan, snow-top, rugs and marmot, mink, fox and fur skins. Company produces also women's and men's coats, jackets, hats, slippers, warm uniforms, etc

The cleaner production targets established by the team were:

Reduction of the solid waste by 10% through

- Production of small size goods using trimmed wool and finished trimmings,
- Production of goods using skin rest

Reduction of the water usage by 15% through,

- Replacing of the worn out equipments with progressive technology.

Decreasing the critical contents of sewage water by

- Renovation of a water treatment plant

Reduction of energy usage by 5% through:

- Installation of time sensors at drums in the beam house
- Replacing of lightning in the mechanical workshop by efficient bulb and
- Installation of the modern equipment

Description of some cleaner production options implemented

- 10 new types of products produced from waste skin. Rest of 30 ton sold with profit of 27.7 million tugrik.
- Separation of used salt from raw skins - solid waste generation reduced by 8.7%,
- 12.4 million Tugrik has been invested in the felt producing workshop which resulted in increase of felt production by 5789 m with profit of 22.7 million Tugrik.
- 55.5 million Tugrik investment and replacement of paddle vat used by mixing technology in soaking and washing processes led to:
  - Reduction of water usage by 17%,
  - Increase of material savings by 3%,
  - Increased processing efficiency resulted in saving of 9.8 m Tugruk,
  - Reduce energy usage by 2%.
- Renovation of a Water treatment plant with Czech republic government assistance project for a 1.2 million dollars has been started. The first control test shown chrome content in the waste water decreased by 0.3 mg/l and sulphide- by 5 mg/l

Achievements the project implementation

- 25 cleaner production options have been identified, 70% of which are implemented,
- Processing cost of skin reduced by 0.37 thousand Tugrik and total savings reached 61 million Tugrik,
- Total 69 million Tugrik has been invested,
- Solid waste generation reduced 10.5%,
- Water usage reduced by 10% ,
- Content of critical elements in the sewage water becomes EU standard level.

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BIOKOMBINAT

Biokombinat has been serving the people and the country ever since 1923. In 1973 the company was renovated with Hungarian technical and economic assistance. The enterprise is the only company producing veterinary biological products in Mongolia. The company produces more than 70 kinds of bacterial and viral vaccines, serums, diagnostics and preventives for infection diseases of livestock and animals.

Biokombinat's veterinary biological products cure many dangerous and infectious animal/livestock diseases, such as rinderpest, contagious bovine pleuropneumonia and sheep/goat fox. Like other places in the world, Biokombinat adopts such

production technologies as fermentation, cell cultivation and production of dried live vaccines-leophiles.

As for fixed assets, the company owns:

- 20,000m^2 area,
- Comprehensive production structure, which consist of 10 technological units (such as the workshops for bacterial and viral vaccines, serums and diagnostics),
- Scientific laboratories of chemistry, sterilization, freeze drying and strain bank,
- Heating plant, maintenance workshop and deep wells.

The enterprise is one of the pioneers in cleaner production introduction in Mongolian industries. It is has successfully joined in 2001-2003 the MNCCI –The Netherlands' project "Cleaner Production and Waste Water Abatement by Mongolian Industries-Tuul 21" and received a Certificate "The pioneer in cleaner production".

Project activities and achievements of "Ecoprofit for Sustainable Mongolian Entrepreneurship" Project

Participation in 2006-2008 the EU project "Ecoprofit for Sustainable Mongolian Entrepreneurship" greatly strengtened the cleaner production capability of the company and improved environmental benefits.

1. The campaign "Improvement of good housekeeping at work place" identified different no/low cost options for improving maintenance, separation of solid waste and disposal,
2. Russian type KE-10-14CO boiler has been switched to fluid bed burning by investing 100000US$ which leads to reduction of coal usage from 12000 ton to 8000-9000 ton a year.

3. New heat exchanger installed and steam condensate used for hot water supply of the Songino village.
4. 50000US$ invested in improving isolation and sanitary conditions of packaging boxes and laboratory to increase the pureness of the products.
5. Delivery of products to the customers using own, special transport wheel saved 15000US$ a year.
6. Change of wood packaging of the products by paper reduced the weight by 2,3-5 ton per wheel and the design and the fashion of the products improved.
7. The Cleaner production information data base established in the Information Center.
8. Environmental policy developed as a priority management concern for future.

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SUU Diary

Suu Dairy has been providing milk and milk products to the capital city of Mongolia by since 1958. It is the biggest milk producer providing 60% of Ulaanbaatar's milk product demand. The company employs about 200 people and produces a wide range of milk, custard and yogurt products. The installed production capacity is 8 million liters of milk annually.

The company consists of 5 units: milk processing, yogurt, curd, icecream and milk powder and also have 5 divisions:

control laboratory, marketing, finance, technology and division for countyside. The company is receiving milk from 2500 farms situated around Ulaanbaatar city such as Tuv, Selenge, Zuun Kharaa, Baruun Kharaa, Octyabri, Partizan.

During this EcoProfit programme they established their green team to examin the production processes and compare their data with EU supplied BAT notes, case studies. The following areas were identified for improvement:

- Water use
- Energy Use
- Solid Waste

Targets set by the CP team:

1. Reduction of solid waste by 5% ,
2. Decrease loss water by 20% ,
3. Reduction of energy use by 10%,

Summary of achievements of the project

- 40 Cp options identified and 60% of them were implemented.
- Total investment during the project: 33 million Tugrik
- Up to date economic profit 17.7 million Tugrik.
- Resource savings:
  - Water use decreased by 20%,
  - Sewage decreased by 30%,
  - Energy use decreased by 13%.

Some of No/low cost options implemented:

Reduction of solid waste

- Collection and realization of waste paper and plastic bags,
- Collection and sale of pure-pack waste to the toilet paper producers.

- Replaced main packaging machinery. This cut down significantly on damaged goods at this late stage in the process – a significant business saving as well as a reduction in waste volumes

Reduction of water loss

- Curd production bowl repaired.
- The nozzles installed at all 8 cleaning pipes.
- In addition to this simple leak repairs through out the site are now part of the maintenance plan.
- Installed a meter to monitor milk intake –improved control at the reception area.

Energy Savings

- Installation of the electricity meters,
- Existing lights has been change by efficient lighting
- Management decision: Energy saving - no use of energy while non-operation period, more use of daylight
- Improved building management – this has stopped heating parts of the factory that were unused.

Some recent technology developments include:

2005: an Itali-Czech automatic conveyer for ice cream production installed. Nowadays the company produces 12 types of ice cream and this upgrade has reduced waste production significantly

2006: American-Taiwanese Pure-Pack high temperature/ UHT technology up to 140 degree/ for milk desinfection and packing installed

Options planned to implement

- The renovation of the production process begun in 2008 which will be resulted in improvement of relative environmental indicators.
- To implement ISO-9001, 14001, HACCP standards.
- restructuring of the plant to ensure a more linear process. This will reduce distance between steps, ensure all steps on the one floor (reduced pumping), the internal looping of water (significant water and energy use reduction), improved process control and reduced resource use due to poor production plant maintenance.
- The current practice of internal metering is another continual improvement objective which will allow a far greater degree of process understanding and control

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KHATANSUIKH Impex company

ХАТАНСУЙХ ИМПЭКС
ХИАМ, МАХАН БҮТЭЭГДЭХҮҮН

HASU®

"Hasu" factory for ham and meat products of the company since its inception it has been handing activities renewing and extending the scope and coverage of its operation with the most advanced and progressive techniques and technologies into its production and manufacturing operation and thanks to which it has gained its

space and role on the meat and meat products market of Mongolia for sure and its genuine propose is to produce ecological pure produces making matter use of the meat of Mongolian livestock and to export them top the world market. In 2000 it has extended its production capacity through introducing high productivity equipment from Germany and Austria for making canned products and ham. From 2001 started to export canned pet food to Japan and canned products to Korea. In 2004 introduced new factory with capacity of production 5000 kg canned meat equipped with devices from Germany, Austria and Korea Today the company produces around 30 different products.

Key Indicators:

No	Indicators	Indicator performance	International benchmark
1	Energy usage	4366 kwh/ton	2500-4000 кwh/ ton
2	Water usage	7m3/ton	0,8-15 м3 /ton (UNIDO) 3-5 м3 /ton (EU BAT)

The targets of the cleaner production team

1. Reduce solid waste generation by: set up of a bone processing workshop, better control of packaging, increase of output in the boning process and use of bunch in the production.
2. Reduce water consumption through: better control of water in the processes, reuse of condensed water from sterilization process,
3. Reduce steam consumption through: better control of steam usage, repair the steam pipes.
4. Reduce electricity consumption through: change of existing lamps with efficient lights, segregate and add switch in the room, implement switch-off programs for lights and

equipment when not in use time usage of light, switch to the 2 shifts using cheaper night time tariff

Actions taken during the project period and it's results

1. The solid waste of bones will be reused for producing bone soup and new technology will be developed together with Korean partner. The activity will start in September 2008 with budget of 300 thousand USD and with 20 employees. This is non-waste technology and the company is going to produce bone oil, bone soup and bone flower with annual profit of 50 thousand USD.
2. In production process lot of oil was being disposed in the sewage system and to stop id the company installed oil keeping equipment in the sewage for amount of 3.2 million Tugrik.
3. Saving water from autoclave and cleaning daily 5 ton water the company made savings of 100 thousand Tugrik per month and per year of 1.2 million Tugrik.
4. Developing steam saving principle for usage in technology and heating and installing regulating measurer of outside temperature saved per month 300 thousand Tugrik and per year 3.6 million Tugrik.
5. Some measurements taken to make 4.2 % saving on energy:

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Cleaner Production cluster of the "Ecoprofit and sustainable business development" Project

On the 28th of March 2008, MNCCI organized "Cleaner Production cluster of the "Ecoprofit and sustainable business development" Project and 3C- Clean environment, Cleaner production and Clean food Policy" Workshop in the Round hall of Government Building No.11. The Workshop attended representatives from Ministry of Environment, State Professional Inspection Agency, Ministry of Industry and Commerce, Center of Standardization and Measurement and representatives from over 40 companies. The results of CP capacity building activities achieved by APU, Gobi, Darkhan Nekhii, Biokombinat, Suu, Khatansuikh, Montulga companies were introduced and discussed.

In the project implementation period the benefit at the above mentioned companies counted more than 235 million tugriks where energy, water consumption, waste and waste water were reduced by 10-30%. Among this achievement this companies built capacities for CP implementation, established ecological teams and developed ecological policy. The companies are agreed beside the benefits from CP implementation to continue the activities in this field.

During the cluster the experts from Austria and Ireland made presentations and expressed their opinions about CP and its benefit.

Also some energy savings related literature, publications, measuring instruments were presented. Among them:

- CP and Energy efficiency information database
- Information on CP and Energy efficiency equipments
- Compact inspection mini labor for food safety
- Instruments and tools for energy audit

EC FUNDED PROJECT: "GREEN PRODUCT DEVELOPMENT AND LABELING IN MONGOLIA: INTRODUCTION, PROJECT ACTIVITIES

Duration of the action:	January 2009 – December 2011
Implementing Agency:	IVAM UvA BV, Amsterdam Netherlands
Partners:	GrAT, Vienna, Austria MNCCI (Mongolian National Chamber of Commerce and Industry) and MASM (Mongolian Agency for Standardization and Metrology)
Associates:	MFALI (Ministry of Food, Agriculture and Light Industry) MNET (Ministry of Nature, Environment and Tourism)

The overall objectives are:

The overall objectives the action aims to contribute to are:

1. Enhancing the production and sales of sustainable Mongolian products
2. Reducing the environmental impact of locally produced products
3. Strengthening the Mongolian certification standards and procedures on sustainability in line with international requirements.

In order to contribute to these objectives the specific objective (purpose) of the project is to *Strengthen the business support network on the development and promotion of sustainable Mongolian products.*

Expected Results

1. Awareness raised and capacity build at business and target organisations on business support for the development and marketing of green products.
2. Manufacturers aware and capable on opportunities for development, marketing and sales and export of green products.

3a. The development and implementation of national sustainable product labels and certification procedures, linked with international requirements.

3b. International sustainable product labels and certification schemes introduced in Mongolia.

4a. Capacity to develop promotion policies on sustainable consumption addressing retailers and consumers.

4b. Initiatives for the development and implementation of green Mongolian products procurement programmes by ministries and public bodies.

Brief description of activities

Training and coaching of the national and local MNCCI and MASM network on sustainable products development support for manufacturers.

Green Products Challenge for manufacturers including awareness raising and information supply (publications, website and seminars) and support of selected manufacturers on green product development and business planning (marketing and financing).

National fair and conference on Green Mongolian Products promotion and developments.

Training and coaching on development and implementation of sustainable product labels and procedures in line with international requirements.

Training and stakeholder meetings on green products promotion strategies and policy dialogues and preferential green procurement initiatives.

GREEN PROJECTS UNDER RURAL MICRO AND SME'S PROMOTION DIVISION

Rural Economic Development – Learning From Successful Examples

About this folder

Are you interested in dairy production, the cultivation of animal feeds, an Aimak – centre free from plastic waste, soybeans and maize cultivation or buckwheat production? Then this folder might provide you the right information to get in touch with Mongolian experts who can help you do the same kind of activity in your local area.

The partnership project between MNCCI and DIHK

Since the year 2006, the partnership project between the Mongolian National Chamber of Commerce and Industry (MNCCI), the Association of German Chambers of Industry and Commerce (DIHK) and SEQUA – Partner of German Business are promoting the economic development of Aimaks and Soums

all over Mongolia. In doing so, we are supported by the German Federal Ministry for Economic Cooperation and Development (BMZ).

The objective is to assist local chambers of commerce and industry in their efforts towards economic growth. We are active in all Aimaks, where a local chamber of commerce and industry is existing. Currently the chamber has local chambers in 17 out of Mongolia's 21 Aimaks. Each year, small projects are selected and supported through advice and funds. The initiatives shall finally generate income and employment for the rural population and contribute to protect the environment. One key requirement is that these initiatives can run on their own once the local chamber has withdrawn its support.

Project partners

The Mongolian National Chamber of Commerce and Industry was established in 1960. Mongolian law has assigned MNCCI the tasks of representing the interests of its members, putting forward proposals for improving the business environment, issuing certificates of origin, establishing arbitration laws, conducting trade fairs and exhibitions and engaging into export and import inspections.. MNCCI has a network of 17 affiliated local chambers which are each covering the territory of one Aimak.

The ***Association of German Chambers of Industry and Commerce (DIHK)*** is the umbrella organization of 81 chambers of Commerce and Industry on sub-national level in Germany and a network of 120 chambers representing the interests of more than 3.5 million German entrepreneurs. It has entrusted a sister company, SEQUA GmbH – Partner of German Business,

with the management of the partnership project with MNCCI. Since its foundation in 1991 SEQUA has been supporting the worldwide development activities of Germany's private sector.

The ***Federal Ministry for Economic Cooperation and Development (BMZ)*** is funding and monitoring the project. Since the 1980s it runs a programme targeting the strengthening of business membership organizations in developing countries

Project 1: Animal feeds production in Tuv Aimak.

- Cultivation of 7 types of plants for the produce animal fodder on 25 hectares of land, harvest of 6 tons of crops. Trainings for 57 livestock farmers and agricultural officers from all soums of Tuv Aimak.
- Project implementation: Tuv CCI, "Mon Tarimal" Co., Ltd., Governor's Office of Bayan Chandman soum, University of Agriculture:

Project 2: Recycling of plastic waste in Arkhangai and Uvurkhangai Aimaks

- Establishment of a small plant for the processing of plastic bags and aluminium. Manufacturing of products such as chairs and poles. Creation of 10 jobs at the two plants; 65 scavengers generate a permanent income.

- Project implementation: Arkhangai CCI, Arkhangai Governors' Office; Uvurkhangai CCI, Governor's Office of Arvaikheer soum, "Batgunzam" co-operative Aimag's Welfare and Services division, Sarlag-Erdene Association.

Project 3: Buckwheat production Selenge Aimak

- Importation of 2 tons of high-quality buckwheat seed from Russia and cultivation of 3 hectares of land in Shaamar, Saikhan and Khustai Soums; 2 trainings for local farmers and drafting of training handbooks.
- Project implementation: Selenge CCI and NGO Sustainable Agriculture.

Project 4: Dairy products from Yak-milk, Uvurkhangai Aimak

- Establishment of a dairy a factory with the capacity to produce 500 litres of yak milk per day in Arvaikheer soum; creation of 4 jobs at the factory. 30 families accrue regular income by supplying the factory with the milk at a set price.
- Project implementation: Uvurkhangai CCI and Sarlag Erdene Association.

Project 5: Corn and soybean production, Khovd

- Plantation of 4 hectares of corn and 2 hectares of wheat, retaining 1 tons of seed reserves. Production of fodder from corn, soybean and lucernes and distribution to more than 400 family herders. Creation of 12 jobs.
- Project implementation: Khovd CCI and Oin Tugul Co-operative.

III. CLEAN FOOD

THE YEAR OF FOOD' SUPPLY AND SAFETY-2008

Within the framework of "The year of food' supply and safety-2008" announced by the Government there are being implementing a number of activities across the country such as:

- Set up favorable legal environment for development of sustainable production and realization of food staff.
- Capacity building of the independent, neutral laboratory for food safety investigations.
- Improvement of control and verification system for food safety and increase production, store, sale's and transportation' requirements.

Ministry of Food and Agriculture asked the Korean "KOIKA" have decided to implement
"Establishment of the verification system to guarantee safety of food originated from livestock" project for amount of 67 million US in 2008-2010.

1. General

"Clean eco-product" Programme was established based on statements in the Government' program "To support establishment of the targeted market for ecologically clean products, selected strain and livestock of best clan", "to establish favorable legal environment to support processing and production of ecologically clean raw materials and bio-supplements".

Development of Mongolian brand "Clean eco-product" using country's advantage of relatively clean and wild virgin nature and introduction of it to the foreign and local markets will support extension of production, agriculture, service and increase export, realize eco-oriented policy and economic growth and build new capacity.

2. This program aims to unify the understandings on the concept "Clean eco-product", set up of favorable legal and market environment for production of ecological clean products.

Since, globally accepts that "Clean eco-products" play important role in ecological sustainability, sustainable development of agriculture, production of healthy food, the standards to all steps of life cycle of the products, starting from raw materials to end-user or on every activity have been set very high.

3. The term of "Clean eco-product" comprises products originated from clean ecology and agriculture, which have not any negative impact to human health, the chemicals and supplements used in the processing do not exceed internationally accepted standards and produced using environmentally friendly technology.

GREEN LABEL AND GREEN BAR CODE

Within the framework of implementing the Mongolian National Action Plan on Food Security, and the purpose of drafting a national action program which prioritises Cleaner Production, clean food, environment and ecologically clean products, as a policy direction, the Mongolian National Chamber of Commerce and Industry (MNCCI) initiated the "GREEN-LABEL" and

"GREEN BAR CODE concept. The green label and bar code are issued to select productcs, which are manufactured to strict eco-friendly standards. The initiative aims to promote awareness of best technology practices, production processes, and to instill healthy food consumption practices amongst consumers and businesses.

"GREEN-LABEL" and "GREEN BAR CODE" are registered trademarks, and according to chapter 31 of the International Trademarks classification,a re issued to "agricultural, plant and forest products, rice not included in other classifications, live animals, new clean fruits and vegetables, seeds, plants, flowers, fodder and other ecologically clean products."

Procedure on issuing "GREEN LABEL" and "GREEN BAR CODE"

Within the framework of activities for food safety in accordance with National Program on "Food supply and it's safety" approved by the Government resolution 242 from 2001, following the national policy for cleaner production, clean products and cleaner environment, to support and encourage cleaner production, within the framework of National strategy for development of ecological clean products, MNCCI issues "GREEN LABEL" and "GREEN BAR CODE".

One. General Provisions

"GREEN LABEL" and "GREEN BAR CODE " are the trade mark and to be issued according to International Trade mark Clause 31 to:

Ecology clean products originated from Agriculture, Garden, Forest and rice, alive animal, fresh fruits, vegetables, seeds, natural plants, flowers, feds, malts, not classified otherwise, in color.

Two. General provisions

"Bio and Eco-product development council" / hereinafter referred to as "Council"/ has a right to issue "GREEN LABEL" and "GREEN BAR CODE"

Three. Legal Definitions and Terms

The definitions and terms used refer to "Sub-scheme for certification of national eco-products" and MNS ISO 14040 serial standards.

Four. Issuing and certifying of "GREEN LABEL" and "GREEN BAR CODE"

4.1. Organization, company /hereinafter referred to as "Company"/ applies to the secretary of the Council for using of "GREEN LABEL" and "GREEN BAR CODE" according to the Form described in Annex 1 to this Procedure. In the application, the environmental aspects and activities being taken by the Company for sustainability of the production should described clearly.

4.2. The secretary of the Council secretary should submit the giving material within 1 month to the Council session.

4.3. In the case of eligible application the Council nominates LCA working group.

4.4. LCA working group conducts LCA according to MNS ISO 14040 serial standards and reports to the Council.

4.5. The Council considers the working group report and gives professional evaluation. Based on the evaluation MNCCI releases a certificate "GREEN LABEL","GREEN BAR CODE".

4.6."GREEN LABEL" and "GREEN BAR CODE" certificate is valid for 2 years.

Five. Use of the"GREEN LABEL" and "GREEN BAR CODE"

The Company uses the"GREEN LABEL" and "GREEN BAR CODE" following the Agreement signed with MNCCI in accordance with the Annex 2 of this Procedure.

Six. Registration of products labeled by "GREEN LABEL" and "GREEN BAR CODE"

The Council will have the Registration book of the certified products and their manufacturers of "GREEN LABEL" and "GREEN BAR CODE".

Seven. Monitoring and verification of sustainability of eco-products

The Council in collaboration with The Department of Inspection of Export and Import Goods and National Center of Cleaner Production will monitor and verify the sustainability of production certified by "GREEN LABEL" and "GREEN BAR CODE".

At present the following organizations have obtained the right to use "Green-Label" and "Green Bar Codes":

List of the companies obtained the right to use green label

1	**Products**	**Companies**	**Date issued**
	Description		
1	Dried mare's milk	"Mon-enzyme" Co.Ltd Ulaanbaatar	6/5/2006
	For centuries Mongols have been using dried mare's milk for healing, treatment and for the sanatoria purpose. The carbohydrate in the mare's milk is mainly milk sugar. It separates Calcium, Fosforium and Magnium from each other and delivers it from the stomach to whole body, increasing calcium in the organism, protecting the bones from the oldness and weakness and strengthening the bones of newborn children. The milk sugar similarly with the holing in the mare's milk protects the liver from the fat grow and melting the fat		

2	Pure sea buck-thorn oil	"Uvs Khuns" Co.Ltd, Uvs Province	6/5/2006
	The product is made oil from sea buckthorn seed, peel and inner bark. The sea buckthorn oil contains glycerol, oleic, linoleum, palmitoleic acids, 40-70mg% alpha-carotenes, 180-250mg% beta-carotenes, 100-165mg% vitamin E and 75-77iodine. The sea buckthorn oil is widely used to promote the recovery, restorative and revitalizing action to treat the skin injuries such as burns, wounds and sunburns and to improve conditions of mucous membranes of gastro-intestinal tract and used as natural dietary supplement and has no side effects		
3	Pure cowberry juice	Erdmoncor "Co.,Ltd, Orkhon Province, Erdenet city	6/5/2006
	Cowberry juice is made from wild berry and purely natural product.		
4	Nettle jam with honey	"Mon-Ali" Co.,Ltd, Selenge Province	6/5/2006
	Nettle jam with honey is a natural product and used as a medicine for healing inner organs.		
5	Cosmetic complex "Camelact"	Moncreme" Co.,Ltd, Ulaanbaatar	6/11/2007
	The cosmetic products contains camel milk from Dundgobi province		
6	Suun Khuruut /dried curd/	"Naingi" Co.,Ltd., Darkhan Province, Kherlen Sum	10/8/2007
	The company produces various milk products from distillated Mongolian cow milk.		
7	Sugar tasting grass extract, birch mushroom extract	"Gantamga" Co.,Ltd., Ulaanbaatar	6/5/2006
	Natural extracts increases immunity and cleans and supports liver		
8	Blueberry jam	"Beneduct" Co.,Ltd., Ulaanbaatar	6/11/2007
	The blueberry jam made from selected natural berries and is being selling successfully in the Japanese market.		
8	Red peel garlic	Zavhan Province, Mankhan Sum	10/8/2007
	The red peel garlic grown in Zavhan province has unique taste and has advantage of making younger, preventing from disease and treating from the particular diseases.		

9	Honey	"Arganat" Co.,Ltd., Selenge Province, Shaamar Sum	6/9/2007
	Bee keeping and has over 450 cells		
10	Grain ferment	"Khunstech" Corporation, Ulaanbaatar	6/11/2007
	The grain ferment used for healing and for supporting the digestive systems.		

A NEW FOOD SAFETY INSPECTION INSTRUMENT LAUNCHED

In the connection to the declaration of the Government of the year 2008 as "Food supply and safety year", the MNCCI has purchased for its Department for Inspection of Export and Import Goods the new compact food safety inspection mini labor from China. This instrument is intended to use for the analyses of foodstuff such as vegetables, water-soaked products, soybean products, dry-salter and preserved food etc. It is suitable for the determinations of Pesticide residues, Formaldehyde, Rongalite, Sulfur dioxide and Nitrates in liquid and solid samples.

1. Pesticide residues in vegetables, fruits, grain;
2. Formaldehyde in water-soaked and related dried products such as frozen fish , cattle stomach, dried shrimp;
3. Rongalite (Sodium Hydroxymethanesulfinate): rice, flour, soy-bean products, sugar etc;
4. Sulfur dioxide contents in canned mushrooms, bamboo shoots, cooking noodles, sugar, dried vegetables, confitures-herbs for cooking etc.;
5. Nitrites and nitrates in drysaltery and preserved food and meat.

A **pesticide** is a substance or mixture of substances used to kill a **pest**. A pesticide may be a chemical substance, biological

agent (such as a virus or bacteria), antimicrobial, disinfectant or device used against any pest. Pests include insects, plant pathogens, weeds, molluscs, birds, mammals, fish, nematodes (roundworms) and microbes that compete with humans for food, destroy property, spread or are a vector for disease or cause a nuisance. Although there are benefits to the use of pesticides, there are also drawbacks, such as potential toxicity to humans and other animals.

Rongalite, also called **Rongalit** (registered trademark of BASF) is **sodium hydroxymethylsulfinate**, or Na+HOCH2SO2-. The salt has many names, including also **sodium formaldehyde sulfoxylate** and **bruggolite**. It is water-soluble and generally sold as the dihydrate. The original use of the compound was as industrial bleaching agent and in textile dying. The other dominating use today is the application as reducing agent in redox-initiator systems for emulsion polymerization.

Formaldehyde (IUPAC name **methanal**) is a chemical compound with the formula H2CO. It is the simplest aldehyde. Formaldehyde exists in several forms aside from H2CO: the cyclic trimer trioxane and the polymer paraformaldehyde. It exists in water as the hydrate H2C(OH)2. Aqueous solutions of formaldehyde are referred to as **formalin.** "100%" formalin consists of a saturated solution of formaldehyde (roughly 40% by mass) in water, with a small amount of stabilizer, usually methanol to limit oxidation and polymerization. It is produced on a substantial scale of 6M tons/y. In view of its widespread use, toxicity, and volatility, exposure to formaldehyde is significant consideration for human health. Formaldehyde is a common building block for the synthesis of more complex compounds and materials. In approximate order of decreasing consumption, products generated from formaldehyde include

urea formaldehyde resin, melamine resin, phenol formaldehyde resin, polyoxymethylene plastics, 1,4-butanediol, and methylene diphenyl diisocyanate.

Sulfur dioxide (also **sulphur dioxide**) is the chemical compound with the formula SO2. SO2 is produced by volcanoes and in various industrial processes. Since coal and petroleum often contain sulfur compounds, their combustion generates sulfur dioxide. Further oxidation of SO2, usually in the presence of a catalyst such as NO2, forms H2SO4, and thus acid rain. This is one of the causes for concern over the environmental impact of the use of these fuels as power sources. Sulfur dioxide is sometimes used as a preservative for dried apricots and other dried fruits due to its antimicrobial properties, it is sometimes called E220 when used in this way. The preservative is used to maintain the appearance of the fruit and prevent rotting. Its presence can give fruit a distinctive chemical taste.

The **nitrite** ion is NO2−. The anion is bent, being isoelectronic with O3. More generally, a **nitrite** compound is either a salt or an ester of nitrous acid. Sodium nitrite is used for the curing of meat because it prevents bacterial growth and, in a reaction with the meat's myoglobin, gives the product a desirable dark red color. Because of the toxicity of nitrite (the lethal dose of nitrite for humans is about 22 mg per kg body weight), the maximum allowed nitrite concentration in meat products is 200 ppm. Under certain conditions, especially during cooking, nitrites in meat can react with degradation products of amino acids, forming nitrosamines, which are known carcinogens.

NCCI 860 Universal Food Safety Analyzer

FOOD SAFETY: HACCP

In December 2003, Mongolia has become 101st member of international GS1 organization and under the MNCCI the society "GS1 Mongolia" was set up to provide for the products of organizations, entrepreneurs and private businesses the code beginning with number "865".

Hazard Analysis and Critical Control Points (HACCP) is a systematic preventive approach to food safety, pharmaceutical safety, etc. that addresses physical, chemical and biological hazards as a means of prevention rather than finished product inspection. HACCP is used in the food industry to identify potential food safety hazards, so that key actions, known as Critical Control Points (CCP's) can be taken to reduce or eliminate the risk of the hazards being realized. The system is used at all stages of food production and preparation processes including packaging, distribution, etc.

Hazard Analysis Critical Control Point (HACCP) was conceived in the 1960s when the US National Aeronautics and Space Administration (NASA) asked Pillsbury to design and manufacture the first foods for space flights. Since then, HACCP has been recognized internationally as a logical tool for adapting traditional inspection methods to a modern, science-based, food safety system. Based on risk-assessment, HACCP plans allow both industry and government to allocate their resources efficiently in establishing and auditing safe food production practices. In 1994, the organization of International HACCP Alliance was established initially for the US meat and poultry industries to mandatory implementing HACCP and now its membership has been spread over other professional/industrial areas.

Hence, HACCP has been increasingly applied to industries other than food, such as cosmetics and pharmaceuticals. This method, which in effect seeks to plan out unsafe practices, differs from traditional "produce and test" quality assurance methods which are less successful and inappropriate for highly perishable foods. In the US, HACCP compliance is regulated by 21 CFR part 120 and 123. Similarly, FAO/WHO published a guidline for all governments to handle the issue in small and less developed food businesses.

The HACCP Seven Principles

HACCP is based around seven established principles.

Principle 1: Conduct a hazard analysis. Plants determine the food safety hazards and identify the preventive measures the plant can apply to control these hazards. A food safety hazard is

any biological, chemical, or physical property that may cause a food to be unsafe for human consumption.

Principle 2: Identify critical control points. A critical control point (CCP) is a point, step, or procedure in a food process at which control can be applied and, as a result, a food safety hazard can be prevented, eliminated, or reduced to an acceptable level.

Principle 3: Establish critical limits for each critical control point. A critical limit is the maximum or minimum value to which a physical, biological, or chemical hazard must be controlled at a critical control point to prevent, eliminate, or reduce to an acceptable level.

Principle 4: Establish critical control point monitoring requirements. Monitoring activities are necessary to ensure that the process is under control at each critical control point. In the United States, the FSIS is requiring that each monitoring procedure and its frequency be listed in the HACCP plan.

Principle 5: Establish corrective actions. These are actions to be taken when monitoring indicates a deviation from an established critical limit. The final rule requires a plant's HACCP plan to identify the corrective actions to be taken if a critical limit is not met. Corrective actions are intended to ensure that no product injurious to health or otherwise adulterated as a result of the deviation enters commerce.

Principle 6: Establish record keeping procedures. The HACCP regulation requires that all plants maintain certain documents, including its hazard analysis and written HACCP plan, and records documenting the monitoring of critical control points, critical limits, verification activities, and the handling of processing deviations.

Principle 7: Establish procedures for ensuring the HACCP system is working as intended. Validation ensures that the plants do what they were designed to do; that is, they are successful in ensuring the production of safe product. Plants will be required to validate their own HACCP plans. FSIS will not approve HACCP plans in advance, but will review them for conformance with the final rule.

Verification ensures the HACCP plan is adequate, that is, working as intended. Verification procedures may include such activities as review of HACCP plans, CCP records, critical limits and microbial sampling and analysis. FSIS is requiring that the HACCP plan include verification tasks to be performed by plant personnel. Verification tasks would also be performed by FSIS inspectors. Both FSIS and industry will undertake microbial testing as one of several verification activities. the occurrence of the identified food safety hazard.

HACCP certification

HACCP management system certifications are only offered by several commercial enthusiasts. However, ASQ does provide Certified HACCP Auditor (CHA) exam to individuals seeking the professional certification.

HACCP application

- Fish and fishery products
- Fresh-cut produces
- Juice and nectary products
- Food outlets
- Meat and poultry products
- School food and services

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