

## ANNUAL JOINT PROGRAMME PROGRESS REPORT

### REPORT COVER PAGE

**Date of Submission:**

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**Country and Thematic Window**

China, Climate Change and Environment

**OPAS No. MDGF - 1654**

**MDTF Atlas Award No: 55144**

**MDTF Atlas Project No: 67144**

**Title: China Climate Change Partnership Framework**

**Report Number: 2**

**Reporting Period: 1<sup>st</sup> January – 31<sup>st</sup> December 2009**

**Programme Duration: 3 years, 2008 - 2011**

**Participating UN Organizations**

FAO, ILO, UNAPCAEM, UNDP, UNEP, UNESCO, UNICEF, UNIDO, WHO

**Implementing Partners**

Department of Climate Change, National Development and Reform Commission (DCC/NDRC), China Council for International Cooperation on Environment and Development, Ministry of Environmental Protection (CCICED/MEP), China International Centre for Economic and Technical Exchanges, Ministry of Commerce (CICETE/ MOFCOM), China International Institute of Multinational Corporations, Ministry of Commerce (CIIMC / MOFCOM), China Society for Promotion of the Guangcai Programme, United Front Work Department (CSPGP/UFWD), Ministry of Human Resources and Social Security (MHRSS), Ministry of Water Resources (MOWR), National Energy Administration (NEA), Ministry of Agriculture (MOA), Ministry of Health (MOH)

**Abbreviations and Acronyms:**

*List the main abbreviations and acronyms that are used in the report*

CA – Conservation Agriculture

CDC - Centres for Disease Control and Prevention

CDM - Clean Development Mechanism

GCCC - Global Climate Change Center

HRPG – heat recovery power generation

LEHAP - Local Environment and Health Action Plan

MOST - Ministry of Science and Technology

PMC – Programme Management Committee

PMO – Programme Management Office

UNTGCCE - UN Theme Group for Climate Change and Environment

**Programme Budget:**

FAO: USD 1,592,160

ILO: USD 214,000

UNAPCAEM: USD 214,000

UNDP: USD 3,445,725 (plus USD 20,000 project preparation costs)

UNEP: USD 1,278,650

UNESCO: USD 999,915

UNICEF: USD 995,100

UNIDO: USD 1,748,000

WHO: USD 1,492,650

Total: USD 12,000,000

## **I. PURPOSE**

1.1 Provide the main outputs and outcomes of the program

### **Joint Programme Outcome(s):**

The CCPF Joint Outcomes are as follows:

1. Mainstreaming of climate change mitigation and adaptation into national and sub-national policies, planning, and investment frameworks;
  2. Establishment of innovative partnerships and dissemination of technologies to mitigate climate change and increase local access to sustainable energy;
  3. Accelerated action by China in assessing vulnerability to climate change and developing adaptation plans and mechanisms.
- 
- OUTPUT 1.1 Improved policies and partnerships at national level to mainstream climate change mitigation and adaptation into policy frameworks: including Post-Kyoto strategies and options for technology transfer, a new Global Climate Change Centre to serve as an international hub for best practices and south-south cooperation on mitigation and adaptation, a new high-level policy task force on ways to link climate change to development and a new Basic Energy Law for China to guide issues of climate change and energy management.
  - OUTPUT 1.2: UN-business partnerships and new 'green' financing mechanisms to mainstream climate change and energy into investment frameworks and business practices. Results associated with this output are focused on business and employment practices and include: development and piloting of Green Business Options (GBO) training module supplementing existing business start-up training programmes to support starting new green businesses.
  - OUTPUT 2.1: Development and dissemination at the local-level of innovative models for energy efficiency. Results associated with this output cover the introduction and replication of demos as well as the application of CDM to rural energy efficiency applications, including a) One pilot clean coal power plant and replications, b) full technology and policy package for coal gangue brick production, c) feasibility study and methodologies for the application of CDM to conservation agriculture.
  - OUTPUT 2.2: Development and dissemination at the local level of innovative models for renewable energy in rural areas. Results associated with this output are focused on three technology areas: a) Biomass pellets, b) off-grid renewable power stations, and c) biogas.
  - OUTPUT 3.1: Climate proofing of poverty reduction in less developed areas of West China and

vulnerable coastal areas of Southeast China: comprehensive research report quantifying employment impacts of transition to low carbon economy and mid-term projection for future trends in selected sectors.

- OUTPUT 3.2: Policies and capacities developed to manage environmental health issues from climate change, including the implementation of the key elements of the National Environment and Health Action Plan focusing on improvement of the management of environmental health risks related to climate change.
- OUTPUT 3.3: Capacities enhanced and policies developed for understanding and adapting to impacts of water management changes on China's environment and development. Results include assessment of, development of adaptation measures for, and increased capacity for monitoring the impact of climate change on water resources and to define and enact remedial action.
- OUTPUT 3.4: Enhanced strategies for climate-proofed and environmentally sound agricultural production. Agricultural development in selected agro-ecosystems of the Yellow River Basin.

1.2 Reference to how the program relates to the UNDAF and how it aims to support national development goals including the Millennium Development Goals

- **CCPF and UNDAF outcomes:** The Joint Programme contributes to outcome No. 3 of the current UNDAF (2006-2010): More efficient management of natural resources and development of environmentally friendly behaviour in order to ensure environmental sustainability and also to MDG 6: Combat HIV/AIDS, malaria and other diseases and MDG 7: ensure environmental sustainability by (I) mainstreaming environmental issues in national and sub-national policy, planning and investment frameworks, (II) improving local management of environmental resources and service delivery and (III) Enhancing capacity to adapt to climate change. Climate change and environment will be one of the three overall outcomes in the next UNDAF cycle and as such the work carried out under JP will continue to be of great importance and relevance to national development goals;
- **Ownership by partner countries:**

All Government counterparts are involved in planning, with all annual work plans jointly drafted by both the UN Agency and its corresponding implementing partner. In implementation, consultation has taken place at all levels, with stakeholder consultancy meetings, and technical workshops were conducted also to ensure involvement at the local level. With regards to field activities, Government counterparts ensure access at the local level, mobilizing their local offices to assist in pilot activities,

including coordinating provincial/local offices to help select trainers, experts, and pilot sites, as well as implementing training activities.

- **Alignment with national strategies:** The China Climate Change Partnership Framework was devised in close consultation with the Government of China; as a result all Activities under the CCPF complement recent government policy. This includes priorities identified in: the *11<sup>th</sup> Five Year Plan* (2006-2010) which saw a shift in China's vision from a focus on economic growth to a broader vision of a balanced 'Xiaokang' society, in which the needs of the economy are balanced with broader environmental and social needs. The programme also aligns to the recommendations provided in China's first-ever *National Climate Change Strategy* launched on 4<sup>th</sup> June 2007. The strategy outlined concrete actions to reduce the carbon intensity of China's future growth and focused on intensity based energy use targets in anticipation of the post-Kyoto regime, the adoption of innovative technologies in coal power generation and mainstreaming adaptation in future development and investment programmes in different sectors. Additionally, many activities have been designed to complement a specific government strategy, for example, Output 3.3 component was designed as part of the China National Water Conservation Programme and in the context of climate change risk. The Joint Programme is directly aligned with the climate change/environmental health management agenda of the China National Environmental Health Action Plan approved in August 2007, responding to the governments call to establish monitoring and health risk assessments related the to health risks posed by climate change.

**Over the past year, the CCPF has become even more central to national priorities. At the UN climate Change Summit in September 2009 President Hu Jintao committed China to “step up efforts to develop a green economy, low-carbon and circular economy, and enhance and enhance research, development and dissemination of climate friendly technologies”. In addition, at the end of 2009 , China committed to reduce CO<sub>2</sub> emissions per unit of GDP in 2020 by 40% to 45% compared with 2005 levels.**

- **Scaling-up strategies:**
- In addition to the scaling-up strategies envisaged in the original Programme Document and those outlined in 2008 Annual Progress Report, the UN Agencies and its implementing partners have gone on to develop new strategies to maximize the results of the CCPF, some of which are already being implemented, and others of which are still being explored, examples include:
- In addition to the dissemination of the results of the seven studies on post-2012 strategies under Output 1.1 at the Carbon Equity Side Event at COP-15, findings will also be shared with relevant

stakeholders at national and sub-national level.

- The Task Force policy recommendations under Output 1.1 were incorporated into the 2009 CCICED annual policy report submitted to the Chinese Premier Wen Jiabao, while the concepts of eco-compensation and agricultural voluntary carbon offset have also been widely promoted among local governments and rural farming communities.
- Preparations are underway to publish policy guidelines based on Task Force's research under Output 1.1 entitled "Rural Development and its Energy, Environment and Climate Change Adaptation Policy". It would include an overview of rural energy, environment, and climate change in China, trends and challenges in rural energy use, the environmental effects of rural energy use, international experience in rural energy, environment and adaptation to climate change, policy and funding options for mitigation and adaptation to climate change in rural areas and case studies on how rural China is conserving energy, improving environment, and tackling climate change while addressing rural poverty.
- UNIDO has developed and funded a project in the South African city of Durban, which make use of materials compiled and best practices on industrial energy efficiency and GHG emissions reductions identified under CCPF Output 1.2, the 'UN Business Compact For Chinese Private Enterprises in Response to Climate Change.' Progress has been made on establishing a joint solar hot water heater venture between UNIDO China, UNIDO South Africa, eThekweni Municipality and two Chinese Solar Enterprises (Beijing Tsinghua Solar and Beijing Micoe Solar). This China-South Africa partnership would allow for the supply, assembly and manufacturing of solar hot water heaters for distribution in South Africa.
- Under Output 2.1 heat recovery power generation in the coal-gangue brick sector, should a Clean Development Mechanism (CDM) assessment of the coal-gangue brick sector indicate that the sector offers a reasonable potential in terms of the CDM, UNIDO will aim to develop a suitable CDM project as an off-shoot of the CCPF;
- The findings of the biomass feasibility study under Output 2.2 helped contribute to the launching in 2009 of a policy by the Ministry of Finance to subsidize existing eligible biomass pellet firms in a bid to promote biomass pellet dissemination in China. This was possible as some of the task force members were also involved in formulating incentive policies for promoting biomass energy in China.
- Under Output 3.1, NDRC hope to develop a provincial adaptation strategic framework based on the pilot site practice as well as a national adaptation strategy for areas where glacier melting has been identified and coastal areas which would be at risk from sea-level rising; UNEP's expertise in capacity building will be made use of, in addition to collaboration with national research institutes;

- Under Output 3.2, information sharing activities between national and local policymakers will help facilitate policy discourse. Development of a curriculum and training materials for health risk assessment is planned to be utilised beyond the scope of the Joint Programme's training activities in the designated four pilot provinces. MOH/CDC also plans to utilize the curriculum in a wider range of training programmes related to environment and tools created in wider reaching climate change assessments.
- CCPF research conducted as part of Output 3.3 on the Yellow River was developed into a case study report on Yellow River Basin that has since been incorporated into UN World Water Development Report III. The report brings international attention to local water research and is the first time that a comprehensive introduction to the management and conditions of a major Chinese river has appeared in the international arena;
- Ministry of Water Resources is considering adopting assessment templates developed under Output 3.3 in the next round of their National Water Resources Assessment.
- MWR has recommended that the revisions proposed to groundwater technical standards under Output 3.3 be implemented nationwide. It is also exploring the possibility of establishing a national level platform to allow climate change and groundwater related information-sharing, which with online capability would enable public scrutiny. Concrete results in the form of groundwater modelling methodologies and technologies under Output 3.3 will be broadly applied across China. The methodologies and technologies developed will also be shared globally.
- A database of all CCPF publications is being compiled to further disseminate the results of the programme; additionally, as activities form part of and feed into agencies national programmes wider-reaching impacts are ensured.
- In year 3, a high level UN/China adaptation forum is planned to showcase the outputs of the adaptation elements of the programme and ensure maximum exposure to high level decision makers. A similar forum is also being considered for the mitigation elements.

## **2. RESOURCES**

Financial Resources:

### **2.1 Budget revisions:**

As of March 2010, only requests for non-substantive budget revisions have been made and approved.

**Additional financial resources obtained: At present, in addition to USD 12 million provided by MDG-F, the Government of China provides an additional USD 2 million of support in the form of in-kind contributions. Co-financing arrangements with brick factories for coal gangue bricks under**



**Activity 2.1.2 amount to additional funding of up to USD 5 million, of which to date USD 1.2 million approximately has been realized to date.****3. IMPLEMENTATION ARRANGEMENTS**

3.1 Summarize the implementation mechanisms primarily utilized and how they are adapted to achieve maximum impact given the operating context

As detailed in the Programme Document and in accordance with the MDG-F Implementation Guidelines, the National Steering Committee (NSC) is the highest body for the strategic guidance, oversight and coordination of all MDG-F Joint Programmes, including the CCPF. The Programme Management Committee (PMC) is responsible for overseeing programme implementation and a Programme Management Office (PMO) has been established housed in an annex of the lead substantive Government Ministry, NDRC.

The PMC met twice in 2009 and during the intervening periods UNTGCCE core group meetings were used to as a platform for communication. Various Output level meetings have also taken place. For example, between FAO and UNESCO on work carried out by both Agencies and their respective counterparts in Yellow River Basin, UNDP and UNIDO on the UN Compact, and finally ILO, UNIDO and UNIDO on possible work in area of occupational safety and health for enterprises participating in coal gangue heat recovery power generation pilots.

3.2 Provide details on the monitoring system(s) that are being used and how you identify and incorporate lessons learned into the ongoing programme

- Since the beginning of the programme, Agencies and Implementing Partners have monitored implementation and reported on their progress and problems encountered back to PMC.
- Performance is also monitored through quarterly narrative reports and additionally a quarterly financial report is requested for internal use to monitor obligation.
- In addition, the PMC co-chair recently had a series of bilateral meetings with the Heads of all participating agencies to monitor both financial and substantive progress, and share lessons learnt.

3.3 CCPF Reports, Assessments, Evaluations by Activity

1.1.1

- An In-depth Analysis of Key Problems Concerning the International Technology Cooperation Mechanism,
- A Consumption Based Calculation of Carbon Budget for Meeting Basic Needs, including Technological and Financial Mechanisms,
- Measurable, Reportable and Verifiable: Mitigation Action and Support,
- Comparability of Developed Country Mitigation Efforts,
- Reduced Emissions from Degradation and Deforestation,
- Sectoral Approach and International Technology Development and Transfer,
- Preliminary Study on Financial Mechanism for Full and Effective and Sustained Implementation of UNFCCC Beyond 2012,
- Proposal on Innovative Mechanism for Development and Transfer of Environmentally Sound Technologies,
- Research on International Mechanism of Carbon Budget Proposal

#### 1.1.2

- Investigation Report on Relevant or Similar Foreign Climate Change Institutions,
- Investigation Report on Domestic Institutions Relevant to Climate Change,
- The Design of Beijing International Climate Change Centre,
- Investigation Report on Permanent Facilities for Sino-International Organizations Cooperation in China,
- China-India Joint Research on Measurable, Reportable and Verifiable (MRV) Emissions Reductions

#### 1.1.3

- Draft technical report & draft policy recommendations,
- Rural Development and its Energy, Environment and Climate Change Adaptation Policy Technical Report,
- Rural Development and its Energy, Environment and Climate Change Adaptation Policy Recommendations Report,
- "Rural Development and its Energy, Environment and Climate Change Adaptation Policy" abstract report,
- Policy recommendations made at CICCED annual meeting,
- Book "Rural Development and its Energy, Environment and Climate Change Adaptation Policy"

#### 1.1.4

- Energy law and the Development of Nuclear Power,
- Energy Law Draft Introduction,
- Research on Rural Energy Issues,
- China Replaceable Liquid Fuel Research,
- Coal Law System Analysis,
- China Energy Law System Research,
- Analysis of Legislating China's Nuclear Law,

- The Relationship Between China's Energy and Electric Laws,
- Analysis of Current Petrol and Gas Legislative Situation,
- The Current Legislative situation of China's Electric Law

#### 1.2.1-2

- Climate Change and Corporate Social Responsibility Report, Climate Change Friendly Financing Guide,
- Guideline Book on Climate Change and Corporate Social Responsibility,
- Climate Change Friendly Financing Guide,
- UN-Business Partnership Climate Change Newsletters,
- Survey Report on Chinese private enterprises response to climate change and energy consumption,
- Best Practice Guide for Industrial Energy Efficiency and GHG Mitigation in China

#### 1.2.3

- GBO Training Materials

#### 2.1.1

- China Clean Coal Industrial Fund Feasibility Study Report,
- Clean Energy Development Conference Report,
- Demonstration enterprises report
- Summary of Clean Coal Development Forum (CEO Roundtable of Chinese and Multi-national Corporations)
- UN China Clean Coal Development Blue Book

#### 2.1.2

- A Sectoral Study of the Coal-Gangue Brick Sector,
- The Heat-Recovery Power Generation Sector in China and a Survey of Potential Project Pilot Sites,
- Coal Gangue Brick Factory Pilot-Site Selection Methodology,
- Feasibility Study Report of A HRPG Project of Juyi Industrial Group, Lingshi, Shanxi,
- Feasibility Study Report of A HRPG Project of Yiwang Ferroalloy Co. Ltd, Jiaocheng, Shanxi

#### 2.2.1

- Biomass Pellet Project Investigation Report,
- Biomass Pellet Pilot Areas Selection Report,
- Biomass Pellet Technology Feasibility study Report,
- Feasibility study report about biomass pellet project in two regions,
- An environmental evaluation of biomass pellet dissemination,
- Demand analysis report,

### 2.1.3

- Feasibility study on the CDM potential in conservation agriculture (CA) and methodological guidelines for the application of CDM in CA,
- Feasibility study on the CDM potential in household biogas

### 3.1.1

- Impact Assessment of Glacier Melting in Himalaya Regions on Social-Economic Development of Northwest Region and Adaptation Strategy
- Report on the Adaptation Needs of Climate Change and Glacier Melting on Himalayas,
- Report on Social-Economic Analysis of Himalayas Affected by Glacier Melting, Adaptation Strategy and Practice of Glacier Melting in Himalayas

### 3.1.2

- Impact Assessment of Rising Sea Level on Social and Economic Development in Coastal China,
- Report on the Impact of Sea Level Rising on Yangtze River Delta, A Social-Economic Analysis of Yangtze River Delta and Adaptation Practice to Rising Sea Levels,
- Adaptation Strategy of Rising Sea Levels in Yangtze River Delta

### 3.1.3

- Low Carbon and Development Report

### 3.2.1:

- Final report 2008 on Environment and Health Management,

### 3.2.2:

- Climate Change and Health Training Manuals,

### 3.2.3:

- Summary of the four reports on EH review,
- International review of environmental health indicators

### 3.2.3:

- Report on Environment and Health Management for Climate Change – Volume I,
- Report on Environment and Health Management for Climate Change – Volume II Health impact, adaptation strategies and research priorities of climate change,

- Report on Environment and Health Management for Climate Change – Volume III Environmental Health workforce competency and training needs evaluation in China

### 3.2.4:

- Report on international review of environmental health indicators

### 3.3.1

- “China: The Yellow River Basin,” pgs. 24-27, United Nations World Water Development Report III, Case Studies Volume, Facing the Challenges, 2009
- “Tending to the ‘Ailing Mother River of China,’” A World of Science, Natural Sciences Quarterly Newsletter, Vol. 7 pgs. 16-18, April – June 2009

### 3.3.2-4

- Any key findings and digital copies of publications shared at this special session at Yellow River Forum,
- Investigation and analysis of the sea water intrusion and its dynamics conducted,
- The impacts of climate change on groundwater regime and quality analyzed,
- The effects of groundwater level and quality on safe drinking water and livelihood vulnerability evaluated

### 3.4.1-5

- Guidelines on how to involve communities
- Situational analysis report of the Yellow River Basin
- Training manuals for local authorities

## **4. RESULTS**

4.1 An assessment of the extent to which the program components are progressing in relation to the outcomes and outputs expected for the year.

4.2 Main activities undertaken and achievements.

1.1 Improved policies and partnerships at national level to mainstream climate change mitigation and adaptation into policy frameworks

- The CCPF has helped deliver improved policies and partnerships at national level to mainstream climate change mitigation and adaptation into policy frameworks. Following CCPF participation in

UN Climate Change Conference COP-14, in Poland, December 2008, a Side Event on Carbon Equity was also held at COP-15:

- Policy recommendations were presented by the Rural Task Force on Climate Change, Environment and Rural Development at 2009 CCICED annual meeting.
- A training on CDM was carried out with 80 local and 20 international representatives from Pakistan, Laos, Nepal, Myanmar, Sri Lanka, and Bangladesh participating.
- The draft Energy Law was submitted to The People's Congress at end of 2009. A series of rural energy development strategies have been developed (detailed strategies are outlined in the report "Research on Relevant Rural Energy Issue" which also comprises a situational analysis of rural energy and analysis of the effects of energy demand and supply on China's rural development and the future balance of energy demand and supply in rural China).

#### 1.2 UN-business partnerships and new 'green' financing mechanisms to mainstream climate change and energy into investment frameworks and business practices

- CCPF has helped develop UN-business partnerships and new 'green' financing mechanisms:
- A series of materials promoting UN-business partnerships and 'green' financing mechanisms has been developed, including: Guideline Book on Climate Change and Corporate Social Responsibility; Enterprise Training Handbook; UN-Business Partnership Climate Change Newsletter, and Climate Change Friendly Financing Guide.
- Capacity has been built on CSR and awareness of UN Compact through a series of in-house and group training activities, of which the final group workshop and pilot enterprise training will both taking place in Q1 2010.
- With the aim of building on partnerships established with Guangcai members, project publications will be widely distributed to all Guangcai members. The launch of the project website will provide a further opportunity to share the studies, publications and achievements of the activity.
- Following pilot training workshops in Shenyang for graduate students and in Chengdu for business starters for earth-quake recovery, GBO training materials have been revised and integrated with GYB by developers. "The Training of Trainers Workshop" will take place in Q1 2010 and training subsequently rolled out in 10 training institutions and 10 universities across China.

#### 2.1 Development and dissemination at the local level of innovative models for energy efficiency

- The development of local-level innovative models for energy efficiency is progressing well. The Clean Coal Development Forum was held as part of 3<sup>rd</sup> International CEO Roundtable of Chinese and Foreign Multinational Corporations in September 2009.
- Construction of the first of two heat recovery power generation (HRPG) coal gangue brick plants is underway. The plant will be operational by Q2 2010. CCPF funding has contributed USD 330,000 or 22% of the cost of the construction of the total HRPG plant investment of USD 1.5 million, with the remainder financed through a co-funding by Juyi Industrial. A feasibility study has been conducted to assess whether the Chinese coal-gangue brick sector has CDM potential. This study will report its findings in Q1 2010.
- An Expert Group Meeting (EGM) in September 2009 was held in Beijing to review the feasibility studies and methodology guidelines on the application of CDM Facility for conservation agriculture (CA) and biogas. Final drafts of the reports on conservation agriculture and biogas will be ready for publication by end of February 2010. Preparations for the International Seminar on the Application of Clean Development Mechanism (CDM) Facility for Conservation Agriculture (CA) have started. The seminar is tentatively scheduled for May 2010.

## 2.2 Development and dissemination at the local level of innovative models for renewable energy in rural areas

- The final reports: Biomass Pellet Demonstration Site Selection, Biomass Pellet Environmental Evaluation, Biomass Pellet Feasibility Study, and Biomass Pellet Technological and Economic Evaluation Report have been completed.
- In the original programme document, it was anticipated that pilots should be set up in rural areas. However, the findings of the biomass feasibility study indicated that biomass pellet dissemination would be more suitable in small cities.

## 3.1 Climate proofing of poverty reduction in less developed areas of West China and vulnerable coastal areas of Southeast China

- Work on the climate proofing of poverty reduction in less developed areas of West China and vulnerable coastal areas of Southeast China is ongoing and research quantifying employment impacts of transition to low carbon economy and mid-term projection for future trends in selected sectors has produced substantive results;
- Regarding research on glacial melting, two reports: "Adaptation Needs and Social-economic

Analysis of Climate Change” and “Impact of Glacier Melting in Himalayas” have been completed. As for research on sea-level rising: two reports: “The Impact of Rising Sea Level on Yangtze River Delta” and “Social-economic Analysis of Impact of Rising Sea Level in Yangtze River Delta” have been completed. Capacity building activities under both Activities 3.1.1 and 3.1.2 based on research findings will begin in YIII.

- Research report “Low Carbon Economy and Employment in China” has been completed. The research results indicate that overall employment impacts of the transition to low carbon economy by 2020 will be positive in China, but that this entails loss of jobs in coal powered electricity and cement sectors whereas employment opportunities in clean energy forestry and forestry related industries (sideline products and forestry tourism). The research findings provide inputs into national policy dialogue on employment, human resources/skills development, climate change and environment, and highlight the need for coordinated and coherent responses to realizing a just transition to high-employment low carbon economy.

### 3.2 Policies and capacities developed to manage environmental health issues from climate change

- Good progress has continued to be made against CCPF indicators in developing policies and capacities developed to manage environmental health issues from climate change:
- The major outcomes for 2009 in supporting institutional capacity have included; 1) finalisation of a major assessment on training and workforce, 2) the development and completion of a training manual on environmental health management and climate change 3) delivery of leadership training at both national and province levels, 4) the completion of international and national study tours by relevant government staff to gain skills and knowledge on environmental health and climate change.
- Critical reviews of the nature and effectiveness of local government in the four pilot provinces of Jiangsu, Chongqing, Gansu and Guangdong have also been completed. The reviews are important precursors to strategic plan development at the local level.
- Training packages to strengthen the capacity of pilot provinces were completed in September 2009 and made available to the four provinces for their use in development of their Local Environmental Health Action Plans (LEHAPs)
- An international review of environmental health indicators to serve as a baseline for assessment and improvement of China’s EH monitoring has been completed and a national review of environmental health monitoring commenced in December 2009 as has the development of national indicators. The final report will be reviewed completed in March 2010.



### 3.3 Capacities enhanced and policies developed for understanding and adapting to impacts of water supply changes on China's environment and development

- The CCPF is on target to deliver enhanced capacities and policies to allow the understanding of and adapting to the impacts of water management changes on China's environment and development;
- The Yellow River case study was presented at 5<sup>th</sup> World Water Forum Side Event held in Istanbul, Turkey, March 2009. The presentation was incorporated into the UN World Water Development Report III which was also officially released at the forum;
- Construction of Geographic Information System (GIS) commenced in Q2 2009. Since then, GIS mapping of Yellow River Basin, modelling work, initial scenario development necessary for the research on climate change and its impacts on water resources in the Yellow River Basin have been completed. Results derived from scenario development will form the basis for policy recommendations and indicator development to be completed in YIII.
- The conceptual model for groundwater simulation and management was finalized. Specific hydro-geological conditions were investigated and scenarios identified and groundwater responses to climate change tested. Little research has been conducted on the potential effects of climate change on groundwater or ground-surface water interaction in both developed and developing countries. The model would, as such, be very useful to policymakers in formulating national policies to mitigate or adapt to the effects of climate change on groundwater.
- To date, training on groundwater monitoring has been provided to a total of 196 local technicians and professionals from seven River Basin Committees as well as 31 Provinces.
- Research on the impact of climate change on Yellow River Basin and groundwater monitoring were both shared at 4<sup>th</sup> International Yellow River Forum, Zhengzhou, 2009.

### 3.4 Enhanced strategies for climate-proofed and environmentally sound agricultural production: Agricultural development in selected agro-ecosystems of the Yellow River Basin

- Good progress has been made in relation to CCPF Indicators on C-PESAP Strategies and agricultural development in selected agro-ecosystems of the Yellow River Basin:
- To date, more than 120 field technicians and 320 farmers from the four pilot provinces: Ningxia, Shaanxi, Henan and Shandong, have been trained in Climate-proof and environmentally sound

agricultural practices (C-PESAP), adopting best management practices to reduce the vulnerability of agriculture to climate change and reducing pollution from agricultural activities. About 30 agricultural practices which both address C-PESAP and are suitable for the four provinces have been identified and documented. Pilot testing of some practices identified has commenced and will continue until autumn 2010. The Information System (IS) will be officially launched in Q1 2010. The situation analysis report for the Yellow River Basin has been consolidated and will be ready in Q1 2010 as well.

- Critical additional inputs on how to involve communities and farmers in planning for C-PESAP have been extracted and documented from lessons learned and experiences of the farmers from training and demonstration activities which will continue until fall 2010.
- The project team has begun to prepare for the workshop “International Symposium on Climate-resilient and Environmentally Sound Agricultural Production” demonstrating best agricultural practices in April 2010.

**Notation:** In this regard it is **essential to identify, describe in detail** and **clearly state** who the joint programme beneficiaries are. How the joint programme is attempting to reach them, how many beneficiaries the joint programme is actually reaching and in what manner.

**Notation:** Information on beneficiaries should be as disaggregated as possible.

**Notation:** It is especially important to describe how the programme is having an effect in the life of the beneficiaries. It would be very helpful if any life stories can be identified to illustrate the impacts of the joint programs on real people. Beneficiaries could be individual, groups of people, institutions, etc.

For details of beneficiaries by focus area please see 2008 Annual Progress Report.

An updated list of direct beneficiaries of CCPF Activities to date follows:

<b>Beneficiary type</b>	<b>Estimated number of direct beneficiaries to date</b>
Academia	476
Government – Central	702
Government - Local	428

Enterprises – Local	726
Enterprises – International	535
International Organizations	245
NGOs- International	33
Other:	2,665 (Including: villagers in Tibetan dialect-speaking area; local people in Shaanxi, Hebei and Shandong; and representatives from business associations, farmers and field technicians, etc.)
<b>Total No. of Beneficiaries to date</b>	<b>5,810</b>

NB. The above figure represents direct beneficiaries only (i.e. individuals directly involved in programme activities) Reduced Chinese carbon emissions, and better adaptation, will be of benefit to all China's population, and beyond.

4.3 Implementation constraints, lessons learned from addressing these and knowledge gained from evaluations and studies that have taken place in the course of the year.

General lessons learnt include that, inter alia:

- Regular meetings of Programme Coordinators for all China's MDFG-F Programmes have helped share lessons learnt and best practices
- The Theme Group has been a useful mechanism for coordination on the UN side.
- Output level meetings and a regular CCPF newsletter have also helped the joint implementation
- That said, the fact that the Joint Programme brings together such a large number of UN agencies and Government counterparts makes implementing jointly an ongoing (but worthwhile) challenge. Continuous efforts are needed to ensure effective coordination between different JP Activities.
- Joint implementation would be more easily facilitated through working together in the same pilot provinces (as in China's other MDG-F programmes)

Lessons learnt specific to Outputs:

- Under Output 3.2: A major yet predicted insight gained to-date has been the overall weakness of the environmental health management system in Provinces and lower levels of governance in

China. While weakness was expected and indeed was the part of the rationale for JP action, the degree was not. In addition there is a wide diversity of capacity between Provinces with the poorer western Provinces significantly weaker in terms of workforce skills and infrastructure. Lessons learnt regarding local planning and actions have also highlighted the need to facilitate greater collaboration between and within government agencies and supports the focus of 2010 activities to be conducted within local cities/ rural counties where governance and 'place' is more bounded.

#### 4.4 Key partnerships and inter-agency collaboration: impact on results.

Partnerships and inter-Agency collaborations developed through the course of Activity implementation include:

- Under Output 1.2, UNIDO and UNDP have continued to cooperate closely in the implementation of all aspects of this activity including planning and delivery of training workshops with Guangcai and joint development/ revision of project publications. Quarterly output meetings are held between UNDP, UNIDO and the Government counterpart. Global Compact Network China (GCNC) have been involved in the activity, providing inputs on publications and trainings specific to the UN Global Compact.
- UNESCO has been exploring joint activities with other UN agencies participating in CCPF, among others, UNICEF and FAO. An Output meeting was held with FAO information sharing related to water resources in the Yellow River Basin, participating and supporting each others' workshops, the sharing of expert pool and reaching out to more stakeholders. In addition, UNESCO and FAO have agreed to inform each other, in advance, workshops and trainings that would be conducted under their respective components to enhance synergies. Similar kind of cooperation is also under discussion with UNICEF.
- UNICEF anticipates partnerships will be further expanded through participation in the annual International Yellow River Forum. Partnership and cooperation with leading organizations in the area of groundwater monitoring, management and modelling has also newly been built through experience learning visit to the following institutes in USA and the Netherlands: International Institute for Infrastructural, Hydraulic and Environmental Engineering (IHE), Institute for Delta Technology, National Ground Water Association (NGWA), United States of Geological Survey (USGS).

#### 4.5 Other highlights and cross cutting issues pertinent to the results being reported on.

The Joint Programme makes special efforts to mainstream gender, human rights, and community participation into its activities and outputs. The CCPF promotes sustainable energy and therein the saving of precious natural resources, whilst providing new skills to young people, promoting the creation of new industries and supporting business partnerships all of which help contribute to poverty alleviation. A clean environment is not only important to human health, for many it is now considered a basic right. The CCPF by piloting cleaner industry models and protecting China's water resources, promotes quality of living and thereby promotes basic rights and has contributed to further understanding and cooperation in other international initiatives such as the poverty eradication and sustainable environmental development.

Activities associated with national level policies make an effort to achieve sufficient representation of female policy analysts and researchers. Policy recommendations will carefully take into account human rights issues. Gender, human rights, and community participation have received even stronger emphasis in the mitigation and adaptation components, as this focus in large part on local level initiatives. Health components in particular put special emphasis on women. Certain rural energy initiatives also emphasize the role of women. In particular, replacement of coal with biomass pellets will bring special benefits to women who, in areas with toxic coal, are more exposed than men as they spend more time indoors at the stove.

All local mitigation and adaptation initiatives emphasize community participation in the planning and implementation process. As one of the pilot sites under Output 3.1 is located in an area in the Himalaya region with a local Tibetan population, training materials have been produced in the Tibetan language for distribution to local people. Additionally through field visits, meetings conducted and monitoring activities local academia, officials, farmers who use wells for irrigation, equipment providers have also been engaged in and informed about CCPF. Under Output 3.4, the community is now actively involved in the training sessions and will eventually take part in the creation of action plans.

Capacity building is a major component of many CCPF Activities. Under Output 1.2 multinational and local companies have been engaged and awareness raised on climate change issues in China. Training activities and workshops have focused on climate change CSR and have targeted private enterprises, state owned enterprises and joint ventures. Output 3.4 makes use of: multidisciplinary teams (using expertise from different sectors) and the concept of "trainees become trainers" (to increase and transfer capacity at different levels). It promotes decision-making in pilot places by

different stakeholders, including research institutions, government authorities, technical multidisciplinary teams, farmers associations, field technicians and farmers participating in the demonstration of practices. This will be an important part of ensuring programme success – e.g. ensuring that technologies and strategies are appropriate to local conditions and accepted by local people through a consultative process.

Finally, ILO Activities 1.2.3 and 3.1.3 contribute to MDG 1, Target 2: achieve full and decent employment for all. Green jobs promotion responds to the dual challenge of the decent work deficit and climate change. Employment is a top level priority for the Chinese Government, and its importance has been further enhanced in the current economic crisis situation.

## **5. Future workplan**

5.1 Priority actions planned for the following reporting period to overcome constraints, build on achievements and partnerships and use the lessons learned during the previous reporting period

Key priorities over the next period include:

- Ensuring work at pilot sites is carried out smoothly and according to originally defined timelines and that results are shared across activities help create synergies.
- Ensuring replication and sustainability of CCPF results
- Promoting awareness of Framework results;

5.2 Indication of any major adjustments in the strategies, targets or key outcomes and outputs planned in the joint programme

At present, there are no proposals for any adjustments to targets or key Outcomes or Outputs of the JP. However, noting that CCPF has reached a stage where it is able to demonstrate results, the lead Government Counterpart, NDRC has proposed a high level Adaptation Forum in the lead-up to COP-16 in late-August/early-September 2010. This idea has been well received across the programme and planning is now getting underway. The Government is exploring possibilities for funding as an additional contribution to CCPF.

## **6. ANNEXES**

- YII Annual Work Plan
- CCPF 2009 Programme Monitoring Framework
- Press releases/media coverage etc.:
  - o “China: The Yellow River Basin,” pgs. 24-27, United Nations World Water Development Report III, Case Studies Volume, Facing the Challenges, 2009
  - o “Tending to the ‘Ailing Mother River of China,’” A World of Science, Natural Sciences Quarterly Newsletter, Vol. 7 pgs. 16-18, April – June 2009
- Budget revisions 2009

## Annex 1.- YII Annual Work Plan

### China Climate Change Partnership Framework: Draft Year II Annual Work Plan May 2009 – April 2010

Annual targets	Activity	TIME FRAME				UN agency	Responsible party	Planned Budget		
		Year II						Source of Funding	Budget description	Total amount
		Q 1	Q 2	Q 3	Q 4					
JP output	1.1 Improved policies and partnerships at national level to mainstream climate change mitigation and adaptation into policy frameworks									
1.1.1 Capacity developed for the post-Kyoto negotiations; Mechanisms and financial systems developed for technology transfer <u>Targets:</u> 1. Six studies on key issues in international negotiations have been carried out and presented or circulated at UNFCCC meetings; 2. A series of workshops and roundtables have been held.	Support to Post-2012 Frameworks 1. Carry out studies on key issues in international negotiations have been carried out and presented or circulated at UNFCCC meetings; 2. Hold workshops and roundtables.					UNDP	NDRC	MDG-F	Supplies	0
								MDG-F	Personnel	0
								MDG-F	Training of counterparts	0
								MDG-F	Contracts	300,000
								MDG-F	Other Direct costs	0



	* Total budget has been revised, the original amount at per the Project Document is in brackets, see Annex I for details.					MDG-F	Total (200,000)	<b>300,000</b>	
1.1.2 A technical support unit for policy making, knowledge hub for good practices on mitigation and adaptation; Promotion of south-south cooperation <u>Targets:</u> 1. Capacity building activities for different stake holders and promotion of south-south cooperation have been implemented; 2. Training sessions have been carried out; 3. Workshops have been held.	Support to establish a new Global Climate Change Centre 1. Capacity building activities for different stake holders and promotion of south-south cooperation; 2. Hold training sessions; 3. Hold workshops.				UNDP	NDRC	MDG-F	Supplies	0
							MDG-F	Personnel	0
							MDG-F	Training of counterparts	0
							MDG-F	Contracts	220,000
							MDG-F	Other Direct costs	0
							MDG-F	Total	<b>220,000</b>
1.1.3 A new high-level Policy Task Force on Climate Change, Environment and Sustainable Development established to advise guide strategic policies, monitor progress on implementing the National Climate Change Strategy <u>Targets:</u> 1. Meetings have been held with relevant parties on the medium term progress report	Support to establish a new High-Level Climate Change Task Force 1. Meetings with relevant parties on the medium term progress report and listen to advice; 2. Revise and improve the medium-term report by field trip; 3. Draft project report; 4. Hold Meeting to review the Task Force policy report.				UNDP	CCICED	MDG-F	Supplies	40,000
							MDG-F	Personnel	36,000
							MDG-F	Training of counterparts	15,000
							MDG-F	Contracts	180,000
							MDG-F	Other Direct costs	0

<p>and listen to advice;</p> <p>2. To revise and improve the medium-term report by field trip;</p> <p>3. Draft of project report has been submitted and discussions held;</p> <p>4. Meeting has been held to review the Task Force policy report.</p>							MDG-F	Total	<b>271,000</b>
<p>1.1.4 Basic Energy Law draft; draft a series of energy strategies</p> <p><u>Targets:</u></p> <p>1. Series of roundtables, workshops to collect comments on draft energy law;</p> <p>2. Draft energy strategy be finished and comments collected through workshops.</p>	<p>Support to design China's new Basic Energy Law and series of Energy Strategies</p> <p>1. Series of roundtables, workshops to be held to collect comments on draft energy law;</p> <p>2. Draft energy strategy and collect comments through workshops.</p>				UNDP	NDRC	MDG-F	Supplies	3,000
							MDG-F	Personnel	139,000
							MDG-F	Training of counterparts	15,000
							MDG-F	Contracts	51,000
							MDG-F	Other Direct costs	500
							MDG-F	Total	<b>208,500</b>
<p>JP output</p>	<p>1.2 UN-business partnerships and new 'green' financing mechanisms to mainstream climate change and energy into investment frameworks and business practices</p>								
<p>1.2.1 -2 A UN-Business Compact on Climate Change, and series of high profile communication and awareness raising activities, including citizen engagement</p> <p>Activities 1.2.1-2 to be carried out jointly by UNDP and UNIDO.</p>	<p>Engage multinational and local companies through a UN-Business Compact on Climate Change to increase awareness on climate change issues in China</p> <p>1. UNDP, UNIDO and Guangcai to work with ILO to ensure findings on</p>				UNDP	CICETE/ Guangcai	MDG-F	Supplies	2,000
							MDG-F	Personnel	6,000
							MDG-F	Training of counterparts	0
							MDG-F	Contracts	44,500

<u>Targets</u> 1. UN-Business Compact launched and promoted; 2. Compact support materials produced and published; 3. Findings on best practice on green employment from ILO Activity 1.2.3 have been shared with UNDP, UNIDO and Guangcai to strengthen outputs under Activities 1.2.1-2.	green employment best practice are incorporated into and disseminated to wider audiences as part of UN-Business Compact on Climate Change.						MDG-F	Other Direct costs	7,500	
							MDG-F	Total	<b>60,000</b>	
							MDG-F	Supplies	15,000	
							MDG-F	Personnel	15,000	
							MDG-F	Training of counterparts	0	
							MDG-F	Contracts	113,000	
							MDG-F	Other Direct costs	0	
							MDG-F	Total	<b>143,000</b>	
1.2.3 Development of Green Business Options (GBO) training module has been finalized; trainings of trainers organized; and pilot trainings are ongoing as part of business start-up training programmes (GYB).  <u>Target:</u> 1. Green Business Option Training has been piloted in 20 universities; 2. Findings on green employment best practice have been shared with UNDP, UNIDO and	Demonstrate best practices of “green employment” in three selected companies with UNIDO and FAO  1. Pilot Green Business Option Training; 2. Share findings on green employment best practice with UNDP, UNIDO and Guangcai as part of UN-Business Compact on Climate Change to ensure greater visibility of results under this Activity.							MDG-F	Supplies	0
								MDG-F	Personnel	29,500
								MDG-F	Training of counterparts	22,120
								MDG-F	Contracts	7,000
								MDG-F	Other Direct costs	4,380

Guangcai and disseminated in as part of UN-Business Compact on Climate Change and used to strengthen outputs under Activities 1.2.1 – 2.	* Total budget has been revised, the original amount at per the Project Document is in brackets, see Annex II for details.							MDG-F	Total* (45,000)	<b>63,000</b>
<b>JP output</b>		<b>2.1 Development and dissemination at the local level of innovative models for energy efficiency</b>								
2.1.1 Development and dissemination at the local level of innovative models for energy  <u>Targets:</u> 1. Partnership and financing for one pilot clean coal power plant; 2. Demonstration achieved through replication of Activity results; 3. Information and best practice on cleaner coal technology has been shared with UNIDO to strengthen outputs under Activity 2.1.2.	Pilot and disseminate clean coal technology  1. Pilot clean coal power plant model; 2. Demonstrate results of pilot; 3. Exchange information and best practice on cleaner coal technology with UNIDO.					UNDP	CICETE	MDG-F	Supplies	20,000
								MDG-F	Personnel	12,000
								MDG-F	Training of counterparts	33,000
								MDG-F	Contracts	77,000
								MDG-F	Other Direct costs	15,000
								MDG-F	Total	<b>157,000</b>
2.1.2 Promotion of Heat Recovery Power Generation (HRPG) in the Coal-Gangue Brick Sector  <u>Targets</u> 1. Coal-Gangue Brick Heat Recovery Model has been released; 2. CDM Potential Assessment for the Coal-Gangue Brick Sector has been carried out; 3. Two Pilot Sites have been established; 4. Supporting Policy Analysis has been completed;	Identify pilot bricks making factories  1. Finalize Model Package; 2. Conduct detailed assessment into the potential for CDM to promote uptake; 3. Install and commission pilot sites' systems; 4. Assess existing policies relevant to HRPG; 5. Research and draft international standard position paper on the promotion of HRPG in the coal-gangue brick sector;					UNIDO	MOA	MDG-F	Supplies	19,900
								MDG-F	Personnel	65,100
								MDG-F	Training of counterparts	0
								MDG-F	Contracts	905,000
								MDG-F	Other Direct costs	0

<p>5. Paper on Promoting Heat Recovery Power Generation has been issued;</p> <p>6. Information and best practice on cleaner coal technology has been shared with UNDP to strengthen outputs under Activity 2.1.1.</p>	<p>6. Exchange information and best practice on cleaner coal technology with UNDP.</p>						MDG-F	Total	<b>990,000</b>
<p>2.1.3 Finalization of feasibility studies on CDM application in agricultural sector, and launching of the outputs</p> <p><u>Target:</u></p> <p>1. Specific conclusions have been drawn and recommendations made for application of CDM in biogas and conservation agriculture;</p> <p>2. Findings on CDM application in the agricultural sector have been shared with FAO and UNDP to strengthen outputs under Activities 2.2.1 and 3.4.1-5.</p>	<p>Promote policies, technologies, and practices for biogas and conservation agriculture, with an aim at CDM facility</p> <p>1. Draw conclusions and make recommendations for application of CDM in biogas and conservation agriculture;</p> <p>2. Share information and best practice on CDM application in the agricultural sector with FAO and UNDP.</p>					UN-APCAE M	MOA	MDG-F Supplies	0
								MDG-F Personnel	0
								MDG-F Training of counterparts	60,000
								MDG-F Contracts	0
								MDG-F Other Direct costs	0
								MDG-F Total	<b>60,000</b>
JP output	2.2 Development and dissemination at the local level of innovative models for renewable energy in rural areas								
<p>2.2.1 Development and dissemination at the local level of innovative models for renewable energy in rural areas</p> <p><u>Targets:</u></p> <p>1. Building 1-2 biomass pellets production projects;</p> <p>2. Suggestions have been provided for incentive policies for biomass pellet technology;</p> <p>3. Findings have been shared with UNAPCAEM and FAO and used to</p>	<p>Develop and disseminate a new biomass pellet system, and increase capacities and disseminate productive applications associated with off-grid rural renewable power stations</p> <p>1. Build 1-2 biomass pellets production projects;</p> <p>2. Provide suggestions for incentive policies for biomass pellet technology;</p>					UNDP	Energy Bureau of NDRC	MDG-F Supplies	79,000
								MDG-F Personnel	12,000
								MDG-F Training of counterparts	30,000
								MDG-F Contracts	75,000
								MDG-F Other Direct costs	0

strengthen outputs under Activities 2.1.3 and 3.4.1-5.	3. Share findings on renewable energy models including biomass pellet system with UNAPCAEM and FAO.						MDG-F	Total	<b>196,000</b>	
JP output	3.1 Climate proofing of poverty reduction in less developed areas of West China and vulnerable coastal areas of Southeast China									
3.1.1 Develop methodology, procedure and basic tools for impacts and vulnerability assessment and adaptation. Best practice in adaptation has been identified and demonstrated in pilot sites and up-scaled by local and national trainings.  <u>Targets:</u> 1. Best practice for climate change adaptation has been identified and demonstrated in Himalaya region; 2. Two local and national training courses have been organized for 100 government officials and technical staff; 3. Adaptation practice has been incorporated in governmental planning; 4. Expertise of UNESCO and ILO have been brought in to this Activity; 5. Findings from UNEP Activities 3.1.1 -2 have been used to strengthen outputs of WHO Activities 3.2.1-4.	Analyze key climate risks to poverty reduction and livelihoods in selected areas in the Himalayan Region  1. Develop and print 200 copies of training materials; 2. Demonstrate activities in selected pilot sites; 3. Local training courses and national training workshop for 100; government officials and technical staff; one international conference; 4. Develop of project related publications; 5. Organise PSC meeting & project annual meeting; 6. UNEP to take the lead to ensure synergies between UNEP, UNESCO and ILO Activities 3.1.1-3 and 3.3.1; 7. Work with WHO to ensure synergies between Activities 3.1.1 -2 and 3.2.1-4.  <i>* Total budget has been revised, the original amount at per the Project Document is in brackets see Annex III for details</i>					UNEP	NDRC	MDG-F	Supplies	10,500
								MDG-F	Personnel	60,500
								MDG-F	Training of counterparts	35,000
								MDG-F	Contracts	120,000
								MDG-F	Other Direct costs	11,000
								MDG-F	Total* (210,000)	<b>237,000</b>
3.1.2 Develop methodology, procedure and basic	Assess the impacts of rising seas levels					UNEP	NDRC	MDG-F	Supplies	10,500

<p>tools for impacts, vulnerability assessment and adaptation. Best practice in adaptation will be identified and demonstrated in pilot sites and upscale by local and national trainings.</p> <p><u>Targets:</u></p> <ol style="list-style-type: none"> <li>1. Best practice for climate change adaptation has been identified and demonstrated in coastal regions;</li> <li>2. Two local and national training courses have been organized for 100 government officials and technical staff;</li> <li>3. Adaptation practice has been included in the governmental planning;</li> <li>4. Expertise of UNESCO and ILO have been brought in to this Activity;</li> <li>5. Findings from UNEP Activities 3.1.1 -2 have been used to strengthen outputs of WHO Activities 3.2.1-4;</li> </ol>	<p>on the Southeast coast of China</p> <ol style="list-style-type: none"> <li>1. Development and printing of 200 copies of training materials;</li> <li>2. Demonstrate activities in selected pilot sites;</li> <li>3. Two local training courses and national training workshop for 100 government officials and technical staff; one international conference;</li> <li>4. Develop project related publications;</li> <li>5. Organise PSC meeting &amp; project annual meeting;</li> <li>6. UNEP to take the lead to ensure synergies between UNEP, UNESCO and ILO Activities 3.1.1-3 and 3.3.1;</li> <li>7. Work with WHO to ensure synergies between Activities 3.1.1 -2 and 3.2.1-4.</li> </ol> <p><i>* Total budget has been revised, the original amount at per the Project Document is in brackets see Annex IV for details</i></p>						MDG-F	Personnel	56,500	
<p>3.1.3 The research project has been completed and the report “Low Carbon Development and Employment – Empirical Analysis in China” has been printed.</p> <p><u>Target:</u></p> <ol style="list-style-type: none"> <li>1. The knowledge base on employment</li> </ol>	<p>Map the employment and income impacts of climate change in China, including the detection of potential for green jobs and the need for managed transitions in the labour market</p> <ol style="list-style-type: none"> <li>1. UNEP to take the lead to ensure</li> </ol>					ILO	MOHRSS	MDG-F	Supplies	0
							MDG-F	Training of counterparts	35,000	
							MDG-F	Contracts	120,000	
							MDG-F	Other Direct costs	11,000	
							MDG-F	Total* (209,000)	<b>233,000</b>	
							MDG-F	Personnel	28,000	
							MDG-F	Training of counterparts	0	
							MDG-F	Contracts	0	

<p>impacts of transition to low carbon economy is improved significantly by making this information available;</p> <p>2. Expertise of UNESCO and UNEP have been brought in to this Activity.</p>	<p>synergies between UNEP, UNESCO and ILO Activities 3.1.1-3 and 3.3.1.</p> <p><i>* Total budget has been revised, the original amount at per the Project Document is in brackets see Annex II for details</i></p>						MDG-F	Other Direct costs	2,000
							MDG-F	Total* (48,000)	<b>30,000</b>
JP output		3.2 Policies and capacities developed to manage environmental health issues from climate change							
<p>3.2.1 Strengthen national capacity to improve environmental health management</p> <p><u>Targets:</u></p> <p>1. Final report on comparative assessment of Environmental Health Management and practices with experiences in China has been completed;</p> <p>2. Advance skills learnt and knowledge acquired on environmental health management and best practices and experiences have been shared through the study tour to the selected provinces in china;</p> <p>3. EH managers and officers have improved skills and knowledge;</p> <p>4. Findings from UNEP Activities 3.1.1 -2 have been used to strengthen outputs of WHO Activities 3.2.1-4.</p>	<p>Benchmark Environmental Health best practice and support leadership development for climate change policy and practice</p> <p>1. Domestic study tour to provinces sharing experiences and lessons learned on EH management;</p> <p>2. Work with UNEP to ensure coordination between Activities 3.1.1 -2 and 3.2.1-4.</p>				WHO	MOH	MDG-F	Supplies	1,000
							MDG-F	Personnel	0
							MDG-F	Training of counterpart	0
							MDG-F	Contracts	16,000
							MDG-F	Other Direct cost	0
							MDG-F	Total	<b>17,000</b>
<p>3.2.2. Draft local environmental health action plan from 4 selected provinces is available</p> <p><u>Targets:</u></p> <p>1. Draft Local Environmental Health Action Plan with a focus climate change has been developed in the 4 selected provinces.</p>	<p>Develop effective local action plans to protect human health from climate change risks considered by local authorities and in the framework of the NEHAP</p>				WHO	MOH	MDG-F	Supplies	0
							MDG-F	Personnel	69,750
							MDG-F	Training of counterpart	20,000
							MDG-F	Contracts	132,000



<p>2. Local Environmental Health officials and managers have been trained on EH Planning, and have substantially improved capacity on EH planning (150 officials or managers trained).</p> <p>3. Findings from UNEP Activities 3.1.1 -2 have been used to strengthen outputs of WHO Activities 3.2.1-4.</p>	<p>1. Training package to strengthen local planning for EH management;</p> <p>2. Training courses for local planning on EH management in pilot study areas or provinces;</p> <p>3. Development of LEHAP in 4 provinces;</p> <p>4. Monitoring LEHAP implementation in 4 pilot provinces;</p> <p>5. Work with UNEP to ensure coordination between Activities 3.1.1 -2 and 3.2.1-4.</p> <p><i>* Total budget has been revised, the original total at per the Project Document is in brackets, see Annex IV for details</i></p>								
							MDG-F	Other Direct costs	0
						MDG-F	Total* (188,000)	221,750	
<p>3.2.3 Strengthen capacity building and improved knowledge and skills on the EH risk assessment and identification of the local environmental health service situation</p> <p><u>Targets:</u></p> <p>1. Training workshop conducted on Environmental Health Risk Assessment with focus on Climate Change and Health in 4 Provinces (150 officials, managers and professional staff trained);</p>	<p>Strengthen capacity to assess and respond to key climate risks, and identify the health aspects of climate change mitigation policies</p> <p>1. Critical review on the nature and effectiveness of local government environmental health services in 4 provinces;</p> <p>2. Training courses on EH Risk Assessment at provincial level;</p> <p>3. Two fellows to study EH</p>								
							MDG-F	Supplies	0
							MDG-F	Personnel	79,750
							MDG-F	Training of counterparts	69,500
							MDG-F	Contracts	72,000
					WHO	MOH			
						MDG-F	Other Direct costs	0	

<p>2. Review of the local environmental health services completed for 4 provinces; 3. Findings from UNEP Activities 3.1.1 -2 have been used to strengthen outputs of WHO Activities 3.2.1-4.</p>	<p>4. management and EH Risk Assessment in other countries; 4. Work with UNEP to ensure coordination between Activities 3.1.1 -2 and 3.2.1-4.</p> <p><i>* Total budget has been revised, the original total at per the Project Document is in brackets, see Annex IV for details</i></p>							MDG-F	Total* (212,500)	221,250	
<p>3.2.4 Draft report on Environmental Health Monitoring System Assessment and indicators in China</p> <p><u>Targets:</u></p> <p>1. Assessment of the existing EH monitoring system in china and definition of EH indicators for monitoring system has been completed; 2. Draft report available on Environmental Health Monitoring System Assessment and indicators in China by the end of December 2009; 3. Training materials on EH monitoring and indicators developed by the end of December 2009; 4. Findings from UNEP Activities 3.1.1 -2 have been used to strengthen outputs of WHO Activities 3.2.1-4.</p>	<p>Enhance capacity for monitoring, analysis and reporting progress on impact of climate change</p> <p>1. Assessment of the existing EH monitoring system in China; 2. Definition and agreement of a core set of indicators needed for EH monitoring in China; 3. Development of training materials/tools to support EH monitoring; 4. Work with UNEP to ensure coordination between Activities 3.1.1 -2 and 3.2.1-4.</p> <p><i>* Total budget has been revised, the original total at per the Project Document is in brackets, see Annex IV for details</i></p>					WHO	MOH	MDG-F	Supplies	0	
								MDG-F	Personnel	0	
								MDG-F	Training of counterparts	0	
								MDG-F	Contracts	77,000	
								MDG-F	Other Direct costs	0	
								MDG-F	Total* (74,250)	77,000	
JP output	3.3 Capacities enhanced and policies developed for understanding and adapting to impacts of water supply changes on China's environment and development										
3.3.1 Identify changes caused by climate change,	UNESCO-International Hydrological						UNESC	MOWR	MDG-F	Supplies	5,000

<p>and project future possible scenarios</p> <p><u>Targets:</u></p> <ol style="list-style-type: none"> <li>1. Inception workshop held in the 1<sup>st</sup> quarter, 2009, due publicity and research expertise mobilized;</li> <li>2. Data analysis of past hydrological alterations due to climate change in the yellow river basin has been completed;</li> <li>3. GIS techniques and modelling process have been used to complete projecting of future risk scenarios due to climate change;</li> <li>4. Stakeholder meeting and consultation meeting have been held to ensure a holistic approach for the assessment;</li> <li>5. Expertise of UNEP and ILO have been brought in to this Activity.</li> </ol>	<p>Programme Phase VII (2008-2013)</p> <ol style="list-style-type: none"> <li>1. Inception and technical workshop;</li> <li>2. Stakeholder meeting;</li> <li>3. GIS mapping and modelling;</li> <li>4. Field survey;</li> <li>5. Scenario development and analysis;</li> <li>6. Consultation meeting;</li> <li>7. UNEP to take the lead to ensure synergies between UNEP, UNESCO and ILO Activities 3.1.1-3 and 3.3.1.</li> </ol>			O		<p>MDG-F Personnel 55,000</p> <p>MDG-F Training of counterparts 0</p> <p>MDG-F Contracts 290,000</p> <p>MDG-F Other Direct costs 19,000</p> <p>MDG-F Total <b>369,000</b></p>	
<p>3.3.2 Methodology established and tested</p> <p><u>Targets:</u></p> <ol style="list-style-type: none"> <li>1. Field and lab testing equipments for three pilot areas has been procured;</li> <li>2. Computers for three pilot areas has been procured;</li> <li>3. Field technical support for groundwater monitoring and quality analysis has been put in place;</li> <li>4. Supplies and field work are being effectively coordinated;</li> <li>5. Findings from UNICEF Activities 3.3.2 -4 have been used to strengthen outputs of WHO Activities 3.2.1-4.</li> </ol>	<p>Build capacities to track the effects of climate change on groundwater</p> <ol style="list-style-type: none"> <li>1. Procure field and lab testing equipments for pilot areas;</li> <li>2. Procure computers for three pilot areas;</li> <li>3. Field technical support for groundwater monitoring and quality analysis;</li> <li>4. Coordinate supplies and field work;</li> <li>5. Share findings from UNICEF Activities 3.3.2 -4 with WHO.</li> </ol>			UNICEF	MOWR	<p>MDG-F Supplies 40,000</p> <p>MDG-F Personnel 30,000</p> <p>MDG-F Training of counterparts 10,000</p> <p>MDG-F Contracts 10,000</p> <p>MDG-F Other Direct costs 10,000</p> <p>MDG-F Total <b>100,000</b></p>	
<p>3.3.3 Status and trend of groundwater logging simulated and analysed</p>	<p>Monitor and analyze groundwater level &amp; quality, develop and test a model of</p>			UNICEF	MOWR	<p>MDG-F Supplies 10,000</p> <p>MDG-F Personnel 50,000</p>	

<u>Targets:</u> 1. Analysis of the impacts of climate change on groundwater has been completed; 2. Groundwater management model has been developed and tested; 3. The project is being effectively managed and monitored; 4. Findings from UNICEF Activities 3.3.2 -4 have been used to strengthen outputs of WHO Activities 3.2.1-4.	management and control of ground water level								
	1. Analyze the impacts of climate change on groundwater;					MDG-F	Training of counterparts	38,000	
	2. Develop and test groundwater management model;					MDG-F	Contracts	100,000	
	3. Management and monitoring of the project;					MDG-F	Other Direct costs	10,000	
	4. Share findings from UNICEF Activities 3.3.2 -4 with WHO.					MDG-F	Total	<b>208,000</b>	
3.3.4 Capacity for on-site monitoring and management of ground water resources in selected counties enhanced  <u>Targets:</u> 1. International experience exchange and training for developed countries (USGS) (8-9 persons including: 1 government official, 2 experts and 6 academics/ 2 weeks) have been carried out; 2. National training/workshop for groundwater monitoring has been held; 3. Findings from UNICEF Activities 3.3.2 -4 have been used to strengthen outputs of WHO Activities 3.2.1-4.	Organize a series of training workshops and on-site trainings for information and experience dissemination  1. International experience exchange and training for developed countries; 2. National training/workshop for groundwater monitoring; 3. Share findings from UNICEF Activities 3.3.2 -4 with WHO.					UNICEF	MOWR		
						MDG-F	Supplies	5,000	
						MDG-F	Personnel	70,000	
						MDG-F	Training of counterparts	20,000	
						MDG-F	Contracts	12,000	
						MDG-F	Other Direct costs	5,000	
				MDG-F	Total	<b>112,000</b>			
JP Output	3.4 Enhanced strategies for climate-proofed and environmentally sound agricultural production: Agricultural development in selected agro-ecosystems of the Yellow River Basin								
3.4.1 – 5  <u>Targets:</u>	1. Develop multi-sector Information System (IS); 2. Compile suitable agricultural practices to address C-PESAP and an operational plan, and feed into the IS					FAO	MOA		
						MDG-F	Supplies	132,000	
						MDG-F	Personnel	70,000	

<p>1. IS has been established and is functional;</p> <p>2. Suitable agricultural practices to address climate-proof and environmentally sound agricultural production (C-PESAP) have been identified and a publication has been compiled on the best practices;</p> <p>3. A training manual has been produced and at least 120 government officials, 240 field technicians and 640 farmers have received training;</p> <p>4. One national workshop for best practice collection has been conducted, and information and knowledge exchange strengthened;</p> <p>5. Capacity of county, region and provincial authorities to implement multidisciplinary and participatory approaches towards C-PESAP has been strengthened;</p> <p>6. Workshops and other events have been held to ensure greater visibility of outcomes of Activities 3.4.1-5;</p> <p>7. Findings on C-PESAP have been shared with UNAPCAEM and UNDP to strengthen outputs under Activities 2.1.3 and 2.2.1.</p>	<p>3. Train field technicians and farmer associations in selected agro-ecosystems, and pilot suitable agricultural practices with farmers/farmers associations;</p> <p>4. Train the MDTs and involve authorities to develop a roadmap for communities;</p> <p>5. Promote visibility of outputs of Activities 3.4.1-5;</p> <p>6. Share findings on C-PESAP with UNAPCAEM and UNDP.</p> <p><i>* Total budget has been revised, the original total at per the Project Document is in brackets, see Annex Va-b for details</i></p>							<p>MDG-F</p> <p>MDG-F</p> <p>MDG-F</p> <p>MDG-F</p>	<p>Training of counterparts</p> <p>Contracts</p> <p>Other Direct costs</p> <p><i>Total*</i> (544,000)</p>	<p>41,000</p> <p>190,000</p> <p>0</p> <p><b>433,000</b></p>
<p>JP output</p>	<p>4.1 Management, coordination, monitoring and evaluation</p>									
<p>Management, coordination, monitoring and evaluation</p>	<p>4.1.1 Project coordination and administration, reporting, audit and evaluation and monitoring</p>					<p>UNDP</p>	<p>NDRC</p>	<p>MDG-F</p> <p>MDG-F</p> <p>MDG-F</p> <p>MDG-F</p>	<p>Supplies</p> <p>Personnel</p> <p>Training of counterpart</p> <p>Contracts</p>	<p>0</p> <p>69,000</p> <p>0</p> <p>0</p>

					MDG-F	Other Direct costs	0
					MDG-F	Total	<b>69,000</b>
4.1.2 PMO administration cost			UNDP	NDRC	MDG-F	Supplies	9,000
					MDG-F	Personnel	2,000
					MDG-F	Training of counterpart	0
					MDG-F	Contracts	10,000
					MDG-F	Other Direct costs	29,000
					MDG-F	Total	<b>50,000</b>
4.1.3 UN Programme Coordinator			UNDP	UNDP	MDG-F	Supplies	0
					MDG-F	Personnel	89,000
					MDG-F	Training of counterpart	0
					MDG-F	Contracts	0
					MDG-F	Other Direct costs	0
					MDG-F	Total	<b>89,000</b>
4.1.4 UN Resident Coordinator Office <i>* See Annex VI for details</i>			UNDP	UNDP	MDG-F	Personnel (0)	<b>40,000</b>

<b>Total Planned Budget (including Other Contributions)(5,050,250)*</b>			<b>5,175,500</b>
<b>Management Fee for MDG-F (7%) (353,518)*</b>			<b>362,285</b>
<b>MDG-F Contributions + Management Fee (5,387,985)*</b>			<b>5,537,785</b>
<b>Government co-financing (in kind)*</b>			<b>700,000</b>
<b>Total (6,103,768)*</b>			<b>6,130,785</b>
<i>* The figures in brackets are the original estimates at per the original Project Document</i>			

**China Climate Change Partnership Framework**  
**Draft YII Annual Work Plan**

**Annex I:**

**Proposal of Reallocation of Funding from Activity 1.1.1 YIII to YII**

UNDP along with Department of Climate Change, NDRC implement Activity 1.1.1 under Output 1.1:

*1.1.1 Capacity developed for the post-Kyoto negotiations  
 Mechanisms and financial systems developed for technology transfer*

- The additional budget allocation will allow flexibility to hold roundtable(s) and/or provide further technical support to strengthen the Government’s preparations for COP-15 in Year 2.
- This recommendation was made at NSC meeting, and agreed shortly thereafter by NSC Members (see NSC minutes). The specific details of any round table(s) in Year 2 would need to be worked up and agreed by NDRC and UNDP during the course of the year.
- If no round table and/or other support is agreed, the funds would be carried over to Year 3 as per the original budgetary allocations. If these funds are used in Year 2, the NSC would take a view when considering the Year 3 Workplan on whether to reduce the previously intended scope of Year 3 activity 1.1.1 activities, to finance them in full using underspends or reductions in other components of the programme, or to finance them from any additionally mobilized resources.

<b>Year</b>	<b>Original budget</b>	<b>Revised budget</b>	<b>Balance</b>	<b>Moved to/from</b>
<b>Component 1.1.1</b>				
YII	200,000	300,000	+100,000	100,000 moved from year YIII
YIII	130,000	30,000	-100,000	100,000 moved to year YII
<b>Total</b>	<b>330,000</b>	<b>330,000</b>	<b>0</b>	





**China Climate Change Partnership Framework  
Draft YII Annual Work Plan**

**Annex II:**

**Proposal of Reallocation of Funding from Activity 3.1.3 to 1.2.3 for YII and YIII**

ILO and MOHRSS are implementing two activities under the CCPF programme:

*1.2.3 Demonstration of best practices of green employment and*

*3.1.3 Assessment of mitigation and adaptation in context of employment.*

**ILO has secured additional funding (up to USD 200,000) for research activities on climate change related employment issues. For this reason ILO and MOHRSS wish to transfer total USD 43,000 from CCPF activity 3.1.3 to activity 1.2.3 during years YII and YIII. (See tables below.) This revision puts more emphasis on practical demonstration of best practices and applicable approaches to promoting Green Jobs.**

The budget revision will strengthen ILO-MOHRSS activities under the CCPF, adding more value and making interventions more sustainable. Budget reallocation and the additional ILO funding enable ILO and MOHRSS better contribute to achievement of the CCPF Joint Programme Objectives.

**Secured additional ILO funding:** ILO RBSA Green Jobs Initiative selected China as one of the countries for pilot activities during the period from July 2008 until December 2009. The joint activities with MOHRSS under this initiative include research and formulation of policy recommendations as well as organizing an international experience-sharing meeting on Green Jobs.

The following budget shows the additional funding provided by ILO RBSA broken down by MDG-F expense categories.

<b>Activity 3.1.3 YII Budget for funding from ILO Regional Office</b>		
ILO	Supplies	0
ILO	Personnel	90,322

ILO	Training of Counterparts	79,678
ILO	Contracts	30,000
ILO	Total	<b>200,000</b>

**CCPF activities that the requested funding reallocation will strengthen:** ILO and MOHRSS are implementing two pilots under the CCPF programme.

- The additional budget allocation to Activity 1.2.3 enables ILO and MOHRSS to develop the collected best practice case studies into a training programme supporting setting up of green businesses. Development of Green Business Options (GBO) has already started in 2008, and implementation will continue throughout YII and into YIII. GBO trainings will be piloted in 20 training institutions around China. Inclusion of GBO training modules into the ongoing Start and Improve your Business (SIYB) programme implemented by MOHRSS and local training providers in over 100 cities and mobilization of the existing SIYB trainers' network ensure a great scaling-up potential.
- The second demonstration will be implemented in YIII to test policy measures to facilitate labour markets' smooth transition into low carbon economy and green jobs. Policy measures to be tested will be identified based on the research done under CCPF and ILO regional Green Jobs projects in 2008-2009.

Year	Original budget	Revised budget	Balance	Moved to/from
<b>1.2.3</b>				
YII	45,000	63,000	+ 18,000	18,000 moved from 3.1.3
YIII	20,000	45,000	+ 25,000	25,000 moved from 3.1.3
<b>TOTAL</b>	<b>65,000</b>	<b>108,000</b>	<b>+ 43,000</b>	
<b>3.1.3</b>				
YII	48,000	30,000	- 18,000	18,000 moved to 1.2.3

YIII	25,000	0	- 25,000	25,000 moved to 1.2.3
<b>TOTAL</b>	<b>73,000</b>	<b>30,000</b>	<b>- 43,000</b>	

**China Climate Change Partnership Framework  
Draft YII Annual Work Plan**

**Annex III:**

**Reallocation of Funding for Activities 3.1.1 and 3.1.2 from YIII to YII**

UNEP along with CCCC and Department of Climate Change, NDRC implement two activities under Output 3.1 under the CCPF Programme:

*3.1.1 Analyze key climate risks to poverty reduction and livelihoods in selected areas in the Himalayan Region*

*3.1.2 Assess the impacts of rising seas levels on the Southeast coast of China*

For both 3.1.1 and 3.1.2, activities including training sessions and adaptation originally scheduled to be carried out in pilot sites in YIII have been moved forward to YII. Funding therefore needs to be reallocated from YIII to YII to ensure their successful implementation.

The following relocations of funding are requested:

<b>Year</b>	<b>Original budget</b>	<b>Revised budget</b>	<b>Balance</b>	<b>Moved to/from</b>
<b>3.1.1</b>				
YII	210,000	237,000	+ 27,000	27,000 moved from YIII
YIII	268,000	251,000	- 27,000	27,000 moved to YIII
<b>TOTAL</b>	<b>478,000</b>	<b>488,000</b>	<b>0</b>	
<b>3.1.2</b>				
YII	209,000	233,000	+ 24,000	24,000 moved from YIII
YIII	268,000	244,000	- 24,000	24,000 moved to YIII
<b>TOTAL</b>	<b>477,000</b>	<b>477,000</b>	<b>0</b>	



**China Climate Change Partnership Framework**  
**Draft YII Annual Work Plan**  
**Annex IV:**  
**Proposal of Reallocations of Funding for Activities 3.2.2 – 3.2.4**

WHO and MOH implement four Activities under Output 3.2:

*3.2.1 Benchmark Environmental Health best practice and support leadership development for climate change policy and practice*

*3.2.2. Develop effective local action plans to protect human health from climate change risks considered by local authorities and in the framework of the NEHAP*

*3.2.3. Strengthen capacity to assess and respond to key climate risks, and identify the health aspects of climate change mitigation policies*

*3.2.4. Enhance capacity for monitoring, analysis and reporting progress on impact of climate to health*

Of the four activities under this output, greater emphasis is to be placed on 3.2.2. In addition, activities originally planned for YIII have been moved forward to YII. WHO and MOH would therefore like to request the transfer of funds totaling USD 33,750 from YIII under components 3.2.2 and from 3.2.4 to the YII budget for component 3.2.2. This will not, however, adversely affect the activities to be implemented under component 3.2.4 as a result.

Additionally, for component 3.2.4, USD 2,750 has been reallocated from YIII to YII to again reflect progress in project implementation.

<b>Year</b>	<b>Original budget</b>	<b>Revised budget</b>	<b>Balance</b>	<b>Moved to/from</b>
<b>3.2.2</b>				
YII	188,000	221,750	+ 33,750	13,250 moved from YIII 20,500 moved from 3.2.4
YIII	29,500	16,250	- 13,250	13,250 moved to YII
<b>Total</b>	<b>217,500</b>	<b>251,250</b>	<b>+ 20,500</b>	
<b>3.2.3</b>				
YII	212,500	221,250	+ 8,750	8,750 moved from YIII
YIII	127,500	118,750	- 8,750	8,750 moved to YII
<b>Total</b>	<b>340,000</b>	<b>340,000</b>	<b>0</b>	
<b>3.2.4</b>				
YII	74,250	77,000	+ 2,750	2,750 moved from YIII
YIII	199,750	177,500	- 22,250	20,000 moved to 3.2.2 2,750 moved to YII
<b>Total</b>	<b>274,000</b>	<b>253,500</b>	<b>- 20,500</b>	

**China Climate Change Partnership Framework**  
**Draft YII Annual Work Plan**  
**Annex Va:**  
**Merged YII Annual Work Plan for Activities 3.4.1-3.4.5**

FAO and MOA implement five activities under Output 3.4:

- 3.4.1. Establish multidisciplinary teams at national and provincial levels, develop multi-sector IS, and conduct situation analysis;*
- 3.4.2. Train the MDTs, select pilot agro-ecosystems, and involve authorities to develop a roadmap for communities and farmer associations' participation;*
- 3.4.3. Compile suitable agricultural practices to address C-PESAP and an operational plan, and feed into the IS to shared with stakeholders;*
- 3.4.4. Train field technicians and farmer associations in selected agro-ecosystems, and pilot suitable agricultural practices with farmers/farmers associations;*
- 3.4.5. Formulate four to five provincial action plans for C-PESAP based on experience derived from the project.*

These activities may be considered different parts of one project therefore, in order to reduce administrative costs and promote efficiency, FAO will issue

- A single contract to the counterpart to implement all activities
- A single tender for the procurement of all equipment to be used in the implementation of all activities

With this in mind, FAO proposes the merging activities 3.4.1 to 3.4.5 into one activity, the drafting a single Annual Work Plan and the consolidating financial and narrative reporting.

There will be no substantive change to the implementation of these activities as a result.



China Climate Change Partnership Framework  
Draft YII Annual Work Plan

Annex Vb:

Reallocation of Funding from YII to YIII for Output 3.4

As abovementioned, FAO and MOA implement all activities under Output 3.4. These activities were to commence at the beginning of 2008. However, the Joint Programme was approved in December 2007, funds transferred to HQ in May 2008 and funds received by FAO China in July 2008. As the Joint Programme started after the crop season, many activities under this component have been postponed until the next crop season, in mid-YII, and will continue into YIII. These activities include:

- Development of multi-sector information system;
- Collection of suitable agricultural practices for climate-proofed and environmentally sound agricultural production (C-PESAP);
- Training of field technicians and farmer associations in selected agro-ecosystems;
- Training of the multi-disciplinary teams (MDT) and government authorities; and
- Pilot suitable agricultural practices with farmers/farmers associations.

The following reallocation of funding is requested to ensure adequate resources for implementation in YIII. Additionally, given the aforementioned circumstances there is the need for an extension of duration of the Joint Programme until 2011 until after the third consecutive crop cycle as initially planned.

Year	Original budget	Revised budget	Balance	Moved to/from
<b>Component 3.4</b>				
YII	544,000	433,000	-111,000	111,000 moved to year YIII
YIII	375,000	486,000	+111,000	111,000 moved from year YII
<b>Total</b>	<b>919,000</b>	<b>919,000</b>	<b>0</b>	

**China Climate Change Partnership Framework  
Draft YII Annual Work Plan**

**Annex VI:**

**Allocation of funding for UN Resident Coordinator Office support to the CCPF**

There is an ongoing need for considerable staff time in the UN Resident Coordinator’s Office to be invested in the provision of support and advice to the CCPF. This had not previously been budgeted for. During the recent visit of the MDG Fund Secretariat, the importance of strong RC Office support to Joint Programmes was underlined, and the Secretariat suggested that funds be cost-recovered from the Joint Programmes to ensure that this function could continue. Examples were given of other countries which were allocating up to 3% of Joint Programme budgets to this end.

In light of the above, it is proposed to allocate \$40,000 for this purpose in Year 2, and \$40,000 in Year 3. Taken together with contributions from other Joint Programme’s and the Resident Coordinator’s Office’s own limited resources, this would be sufficient to maintain RC Office support to the CCPF.

In order not to affect implementation of substantive activities in Year 2, it is proposed that \$40,000 be brought forward from Year 3 to Year 2 to cover this cost. When the NSC considers the Year 3 AWP in twelve months’ time, it may make up the small resulting Year 3 shortfall from programme underspends, or from any additional resources raised.

Y e a r	Original budget	Revised budget	Balance	Moved to/from
<b>Component 4.1.4</b>				
YII	0	40,000	+40,000	40,000 moved from year YIII
Total	0	40,000	+40,000	

**CCPF Joint Programme Monitoring Framework (taken from JP document)**

Expected Results	Indicators	Update December 2009	Responsibilities <sup>1</sup>
1.1 Improved policies and partnerships at national-level to mainstream climate change mitigation and adaptation into policy frameworks	Indicator: No. of scientists and officials having capacity for the post 2012 negotiations Baseline: 50	- At present, 30 officials and 52 scientists have capacity for post-2012 negotiations.	UNDP CICETE ONLGCC
	Indicator: No. of agreements of technology transfer and investment Baseline: 0	- One draft agreement of technology transfer and investment	UNDP CICETE ONLGCC
	Indicator: A knowledge hub for global best practices on mitigation and adaptation Baseline: No such information system	- First activity of Beijing International Centre for Climate Change has been carried out (training on CDM): the Centre itself will be established in the latter part of 2010	UNDP CICETE ONLGCC
	Indicator: No. of cooperative initiatives added into the south-south cooperation framework Baseline: 0	- Training on CDM carried out; 80 local and 20 international representatives from Pakistan, Laos, Nepal, Myanmar, Sri Lanka, and Bangladesh participated.	UNDP CICETE ONLGCC
	Indicator: A new high-level Climate Change Policy Task Force Baseline: No dedicated task force on climate change policy	- The Task Force was established in September 2008.  - Policy recommendations by Task Force were presented at 2009 CCICED annual meeting.	UNDP CICETE CCICED
	Indicator: Basic Energy Law draft Baseline: No basic energy law	- The draft Basic Energy Law was submitted to People's Congress at end of 2009.	UNDP CICETE  ONELG
	Indicator: Series of energy strategies Baseline: Lack of effective energy strategies	- Completed: detailed strategies presented in the report "Research on Relevant Rural Energy Issue".	UNDP CICETE

			ONELG
1.2 UN-business partnerships and new 'green' financing mechanisms to mainstream climate change and energy into investment frameworks and business practices	Indicator: A UN-Business Compact on Climate Change, and series of high profile communication and awareness raising activities, including citizen engagement Baseline: No such compact	- The UN-Business Compact on Climate Change was launched.  - Guidelines on the UN-Business Compact for Chinese private enterprises in response to climate change have been drafted.	UNDP/UNIDO CICETE  Guancai, CIIMC  UNCTAD
	Indicator: No. of climate change-friendly designs and products from multinational firms Baseline: To be identified during the first year of the project implementation	- A series of materials have been developed to support awareness raising events	UNDP/UNIDO CICETE  Guangcai, CIIMC  UNCTAD
	Indicator: No. of best practices of "green employment" Baseline: 0	- 10 case studies on best practices of green businesses and their impact on employment promotion have been completed.	ILO MHRSS
2.1 Development and dissemination at the local level of innovative models for energy efficiency	Indicator: Partnership and financing for one pilot clean coal power plant Baseline: No clean coal power plant in the province	- Partnership has been formed with one pilot clean coal power plant. Financing has not yet been achieved.	UNDP CICETE, Shanxi Government, Earth Institute, CIIMC
	Indicator: No. of entities and individuals received Replication of results from demonstration Baseline: 0	- Replication work started in January 2010.	UNDP CICETE, Shanxi Government, Earth Institute, CIIMC
	Energy and resources efficiency model developed Indicator: model finalized Baseline: no model available Timeframe: 1st semester	- A sectoral study of the coal-gangue brick sector and the heat-recovery power generation sector in China has been completed.  - Construction of the Coal-Gangue Brick Heat Recovery Power Generation Model is ongoing.	UNIDO MOA Counterpart companies

	<p>Pilot bricks making factories established</p> <p>Indicator: Number of the pilots established: 2</p> <p>Baseline: No enterprises using energy efficiency coal gangue technology</p> <p>Timeframe: 3rd semester</p>	<p>- One pilot – Juyi Industrial in under construction with expected commissioning to occur in June 2010; selection of the second pilot factory is ongoing</p>	<p>UNIDO MOA</p> <p>Project staff for pilot sites Counterpart companies / project staff from replication sites</p>
	<p>Pilot bricks making factories performance</p> <p>Indicators (pilot sites):</p> <ul style="list-style-type: none"> <li>- Coal gangue brick production: No. 150 Millions/year</li> <li>- Energy production: 20,000 MW/year</li> <li>- Coal gangue recycled: 300,000 tonnes/year</li> <li>- Energy saving: 3,000 TCE/year</li> <li>- CO2 emission reduction: 6,000 tonnes/year</li> <li>- Unit energy consumption: 0 (Zero) TCE/ 1 Mil bricks (Coal gangue brick)</li> </ul> <p>Baseline:</p> <ul style="list-style-type: none"> <li>- Unit energy consumption: 132TCE/ 1 Mil bricks (Clay brick)</li> </ul> <p>Timeframe: 4th semester</p>	<p>- As above, pilot will be operational in June 2010. This will be a production line of 120 million bricks per year.</p> <p><i>Note: all other indicators will be addressed post pilot commissioning under the evaluation of the pilot HRPG plant.</i></p>	<p>UNIDO MOA</p> <p>Project staff for pilot sites Counterpart companies / project staff from replication sites</p>
	<p>Technical competences upgraded</p> <p>Indicators:</p> <ul style="list-style-type: none"> <li>- Number of technicians trained and licensed: 60</li> </ul> <p>Baseline:</p> <ul style="list-style-type: none"> <li>- No technicians available</li> </ul> <p>Timeframe: 5th semester</p>	<p>- Training of technicians commences in late 2010 for the Juyi Industrial plant.</p>	<p>UNIDO</p>
	<p>New policy set up and financial tools established</p> <p>Indicators:</p> <ul style="list-style-type: none"> <li>- Energy generate has access to the grid and is marketable</li> <li>- Local policy and financial incentives available for power generation through waste heat recovering in coal gangue brick manufacturing</li> </ul> <p>Baseline:</p> <ul style="list-style-type: none"> <li>- No access to the grid</li> <li>- No specific policy and financial incentive to promote power generation through waste heat recovering in coal gangue brick manufacturing</li> </ul> <p>Timeframe: 4th semester</p>	<p>- Significant investigations and consultations in regard to grid connection have taken place in 2009.</p>	<p>UNIDO MOA</p>

	<p>Public awareness campaign, rural areas</p> <p>Indicators: - Number of people aware of the problem and potential remedies</p> <p>Baseline: - Number of people aware of the problem and potential remedies</p> <p>Timeframe: 6th semester</p>	- Public awareness campaign will start in 2010.	UNIDO MOA
	<p>Monitoring and assessment of working condition and working environment. Set up efficiency management protocol and mitigation measures</p> <p>Indicators: - No. of enterprises monitored</p> <p>- Set up protocol productivity parameters</p> <p>Baseline: - Baseline productivity parameters</p> <p>Timeframe: 3<sup>rd</sup> semester</p>	- This will begin once the first pilot has been commissioned.	UNIDO MOA  ILO/WHO  Enterprises
	<p>Indicator: Specific conclusions and recommendations for application of CDM in biogas and conservation agriculture.</p> <p>Baseline: No recommendation</p>	<p>- Conclusions and recommendations for the application of CDM in household biogas and conservation agriculture (CA) have been made in the final study report;</p> <p>- Methodological guidelines for the application of CDM in biogas and CA and are also available.</p>	APCAEM FAO MOA, CAAE, CTCR
2.2 Development and dissemination at the local level of innovative models for renewable energy in rural areas	<p>Indicator: No. of biomass pellets replacing coal</p> <p>Baseline: 0</p>	- N/A.	UNDP CICETE Energy Bureau of NDRC
	<p>Indicator: No. of households with stoves and boiler</p> <p>Baseline: 0</p>	- N/A.	UNDP CICETE Energy Bureau of NDRC
	<p>Indicator: Rural biomass waste management guidance</p>	- Initial investigation and pilot area selection reports	UNDP

	Baseline: Not available	along with a technical feasibility study have been completed.	CICETE Energy Bureau of NDRC
	Indicator: Increased market for productive applications of off-grid rural renewable power Baseline: To be identified during the first year of the project implementation	- N/A.	UNDP CICETE Energy Bureau of NDRC
	Indicator: No. of rural individual and TVEs received trainings on rural renewable power Baseline: 0	- N/A.	UNDP CICETE Energy Bureau of NDRC
3.1 Climate proofing of poverty reduction in less developed areas of West China and vulnerable coastal areas of Southeast China	Indicator: Situation analysis report of glacier in Himalayas (2008) Baseline: no situation analysis report	- Two reports: "Adaptation Needs and Social-economic Analysis of Climate Change" and "Impact of Glacier Melting in Himalayas" have been completed.	UNEP, ONLGCC/MEP/MOST/ CAS /local government
	Indicator: Adaptation strategy for glacier melting (2008-2010) Baseline: no adaptation strategy	- The final draft of the report "Impact Assessment of Glacier Melting in Himalaya Regions on Social-Economic Development of Northwest Region and Adaptation Strategy" has been completed  - The two provincial impact assessments of glacier melting on social-economic development and adaptation strategies in Xinjiang and Gansu should be completed in Q2 2010.	UNEP/ONLGCC/MEP /MOST/CAS /local government
	Indicator: Situation analysis report of sea-level rising in the selected coastal areas (2008) Baseline: no situation analysis report	- Two reports: "The Impact of Rising Sea Level on Yangtze River Delta" and "Social-economic Analysis of Impact of Rising Sea Level in Yangtze River Delta" have been completed.	UNEP/ONLGCC/MEP/ SOA/MOST/ Local government
	Indicator: Adaptation strategy for sea level rising (2009-2010) Baseline: no adaptation strategy	- The final draft of "Impact Assessment of Rising Sea Level on Social-Economic Development of Coastal Region and Adaptation Strategy" has been completed.	UNEP//ONLGCC /MEP/ SOA/MOST/



		- The two provincial impact assessments of rising sea-level on social-economic development and adaptation strategies in Zhejiang and Guangdong Province should be completed in Q2 2010.	Local government
	Indicator: - Outreach materials - no. of individuals received information (2009-2010) Baseline: limited publications and no. of individuals aware of the issues	- Training materials have been outlined, detailed contents are under development and will be ready in 2010.  - 20 people received information on the impacts of glacier melting on water resources.  - An additional 100 Government officials will receive training in pilot provinces in 2010.	UNEP/ONLGCC/MEP/MOST/CAS/SOA/Local government
	Indicator: - Number of feasibility studies, comparative studies and needs assessments conducted; - Geographical areas covered; - Number of policy recommendations given Baseline: - 0	- One comprehensive research report was completed incorporating four separate reports: a macro economic analysis and projection of employment impacts up to 2020 and three sectoral analysis reports on impacts in energy, forestry and cement industries. In addition, the employment impacts of China's green stimulus measures in response to the financial and economic crises were analysed.	ILO MHRSS CASS
3.2 Policies and capacities developed to manage environmental health issues from climate change	Indicator: Institutional capacity for management of climate change risks to health at national and provincial levels Baseline: -no comprehensive knowledge base (KB) -no toolkit or capacity building model adapted to China's need -need for developing a national EH management systems in NEHAP	- Training packages for development of Local Environmental Health Action Plans (LEHAPs) completed.	WHO MOH
	Indicator: Local action plans to protect human health from climate change risks Baseline: -no local EH action plan	- Ongoing.	WHO MOH
	Indicator: Capacity for climate risk assessment and specific policy recommendations	- Completion of critical assessment of environmental health services has provided a framework for the	WHO MOH

	<p>Baseline:</p> <ul style="list-style-type: none"> <li>-Strategic analysis of environmental risks to health in China is out of date</li> <li>-Limited skills, access to tools and knowledge on EH impact assessment, risk assessment or cost benefit analysis</li> </ul>	development of tools and knowledge on risk assessment techniques to be finalized in Q1 2010.	
	<p>Indicator: Health related climate impact monitoring capacity</p> <p>Baseline:</p> <ul style="list-style-type: none"> <li>-assessment of current EH monitoring system in China is out of date</li> <li>-limited skills, access to tools and knowledge on EH monitoring</li> </ul>	- An assessment of the current climate change monitoring system has commenced.	WHO MOH
	<p>Indicator: No. of pilot EH monitoring systems established and made functional, and lessons shared</p> <p>Baseline: no EH monitoring system</p>	- N/a.	WHO MOH
3.3 Capacities enhanced and policies developed for understanding and adapting to impacts of water resources changes on China's environment and development	<p>Indicator: Policy recommendations and development of key indicators on the 11 identified challenges;</p> <p>Baseline: Fragmented, sector based policy papers</p>	- Results have been derived from scenario development which will form basis for policy recommendations and indicator development to be completed in year 3.	UNESCO MWR, Yellow River Conservancy Commission, ONLGCC, and NDRC
	<p>Indicator: Strategies and methodology to monitor groundwater quality developed</p> <p>Baseline: National standard on groundwater quality index. Regional strategies and methodologies, No existing national strategies &amp; methodologies</p>	- Data on groundwater has been collected and an analysis methodology established.	UNICEF, MWR, GCM, local water and Geological sectors
	<p>Indicator: Improved strategies and methodology to monitoring groundwater level</p> <p>Baseline: weak existing national strategies &amp; methodologies</p>	- Revision of the Technical Standards for Groundwater Monitoring has been completed and recommended for national-wide adoption.	UNICEF, MWR, GCM, local water and Geological sectors
	<p>Indicator: An integrated groundwater system in high alter areas</p> <p>Baseline: weak integrated system on water quality and level in part of the areas</p>	- Basic data has been collected and preliminary analysis started.	UNICEF, MWR, GCM, local water and Geological sectors
	<p>Indicator: Partnerships at national level</p>	- Partnerships have been established and	MWR, IWHR, CGM MOA, MOH, MEP,

	Baseline: Weak cooperation among sectors	groundwater management experience exchanged.	CDS
	Indicator: Model of management and control of groundwater level Baseline: No such model	- Groundwater monitoring model has been established and testing will start soon.	MWR, CGS, local water and Geological sectors
	Indicator: Long-term sustainable capacity after the end of the programme Baseline: No enough specific training on groundwater and climate change	- Training has been provided to a total of 196 local technicians and professionals from 7 River Basin Committees as well as 31 Provinces.	MWR, CGS, local water and Geological sectors
3.4 Enhanced strategies for climate-proofed and environmentally sound agricultural production: Agricultural development in selected agro-ecosystems of the Yellow River Basin	Indicator: National and provincial MDTs working with stakeholders (1st year) Baseline: MDTs not available currently	- National and provincial MDTs established and dialogue has been initiated with stakeholders.	FAO MOA, CAAS, YRB authorities
	Indicator: A multi-sector information system for eastern provinces of the YRB facilitating the analysis and exchange of information (1st year) Baseline: No such information and knowledge system	- The Information System (IS) is established although it will not be launched officially until Q1 2010.	FAO MOA, CAAS, YRB authorities
	Indicator: Guidelines to involve communities and farmers associations in planning for C-PESAP (2nd year) Baseline: No guidelines available	- Ongoing – critical and additional inputs on how to involve communities and farmers in planning for C-PESAP are being extracted and documented from lessons learned and experiences of the farmers training (first of the three completed this quarter) and demonstration activity ongoing until fall 2010.	FAO MOA, CAAS, YRB authorities
	Indicator: Technical advice to local authorities to implement C-PESAP by trained MDTs (2nd year) Baseline: Lack of C-PESAP advice	- Ongoing - provincial MDTs continue to formulate and refine corresponding technical advices to local authorities on how to implement C-PESAP and are expected to be completed by the end of 2 <sup>nd</sup> programme year.	FAO MOA, CAAS, YRB authorities
	Indicator: Menu of C-PESAP practices and options for implementation at local level available (2 <sup>nd</sup> year)	- Menu of C-PESAP practices at provincial level has been developed and fed into IS for reference and	FAO MOA, CAAS, YRB

	Baseline: Practices dispersed or not documented	selection for implementation.	authorities
	Indicator: No. of trained field technicians, farmers and farmer associations in C-PESAP (2nd year) Baseline: 0	- To date, more than 120 field technicians and 320 farmers from 4 provinces were trained in C-PESAP.	FAO MOA, CAAS, YRB authorities
	Indicator: Pilot testing of suitable C-PESAP practices (2-3rd year) Baseline: No such plan previously	- Ongoing – pilot testing of suitable C-PESAP practices has already been commenced in some of the pilot sites in Henan and Shandong provinces in October; others will start next spring and last until autumn 2010.	FAO MOA, CAAS, YRB authorities
	Indicator: Four to five provincial adaptation action plans for C_PESAP (3rd year) Baseline: No provincial action plan	- N/A.	FAO MOA, CAAS, YRB authorities

The United Nations  
World Water  
Development  
Report 3

Case Studies  
Volume

# FACING THE CHALLENGES



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## 2. Asia and the Pacific

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## China: the Yellow River basin



**Prolonged drought, floods and severe pollution combined with high demand from booming agricultural, industrial and urban sectors are challenging China to take remedial measures and implement a more integrated approach to managing its water resources.**

### Setting the scene

The Yellow River is the second longest river in China after the Yangtze River, and the sixth longest in the world. Originating on the Qinhai-Tibetan plateau in western China, it runs for some 5,500 km across the vast North China Plain, traversing nine provinces before draining into the Bo Hai Sea (Map 2.2). Its catchment area of 795,000 km<sup>2</sup> is home to 110 million people (2000) or about 8.7% of China's population. (The figures increase to 189 million and 14.9% if the flood plain surrounding the lower reach is included.) In 2000, about 26.4% of the basin was urbanized. As the cradle of the northern Chinese civilizations and the centre of China's current political, economic and social development, the river is known as 'the mother river of China'.<sup>1</sup>

### Climate change and variability: declining tendency in rainfall

The basin lies in two different climatic zones: arid and semi-arid continental monsoon in the north-west and semi-humid in the south-east.

<sup>1</sup> Except where otherwise noted, information in this case study is adapted from the draft *Yellow River Basin Case Study Report*, prepared in 2008 by the Yellow River Conservancy Commission, Ministry of Water Resources.

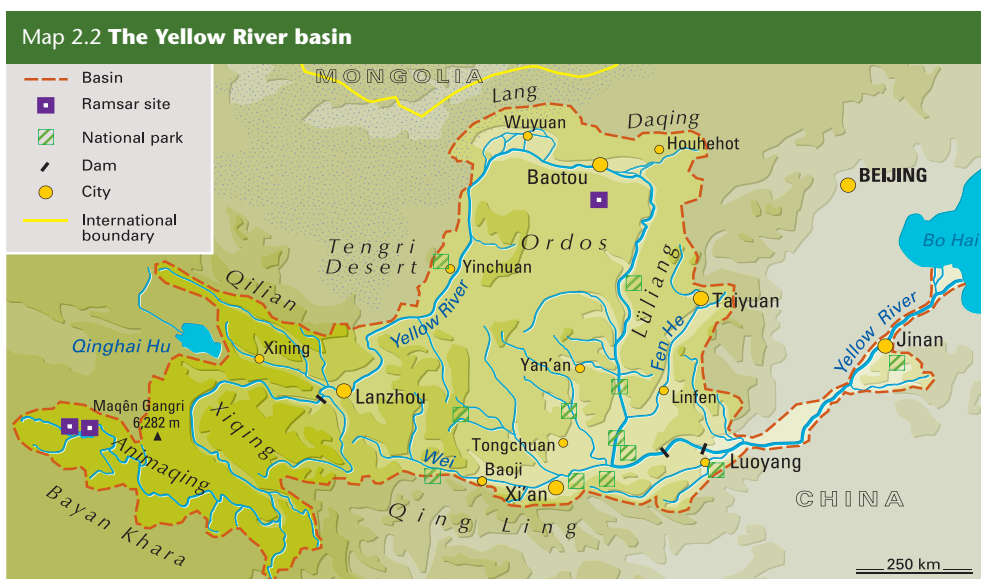
<sup>2</sup> About 3 billion m<sup>3</sup> of this comes from groundwater resources outside the basin's topographic boundaries.

More than 60% of the annual precipitation falls between June and September, during the crop growing season. Average rainfall recorded during 1956–2000 was 454 mm over the entire basin, the lowest level being in the upper reach (372 mm) and the highest in the lower reach (671 mm). There is a declining tendency observed in rainfall over the entire basin (Figure 2.2). During the 1990s, because of prevailing drought conditions, average precipitation was about 7.5% below the long term average (Box 2.1).

According to various models of the effects of climate change on temperature and annual precipitation in the Yellow River basin, annual average temperature could rise by up to 3.90°C and precipitation by 8.67% by 2080 (Xu et al., n.d.). Significant warming could reduce the availability of the water resources (Zhang et al., 2008). Consequently, better water management and adaptation of technology to improve water use efficiency will need to be considered to avoid a critical water shortage in the basin in the coming century.

### State of the resource: declining quality and quantity

Average total renewable water resources for 1956–2000 were estimated at 66.1 billion m<sup>3</sup>, including 17.2 billion m<sup>3</sup> of groundwater. However, in 2000, the total available water supply was around 48.4 billion m<sup>3</sup>.<sup>2</sup> Water demand in the basin sharply increased from 10 billion m<sup>3</sup> in 1949 to 37.5 billion m<sup>3</sup> in 2006. Groundwater has been extensively exploited in the basin since the introduction of the tube well in the late 1950s. In 2000, groundwater abstraction reached 10.7 billion m<sup>3</sup> and there were some 380,000 tube wells in the basin. Consequently,



### Box 2.1 The drought decade

In 1987 the State Council of China established a Yellow River Water Allocation Scheme, to better balance available supply and actual demand by setting a cap on abstraction at 37 billion m<sup>3</sup> per year for average runoff of 58 billion m<sup>3</sup>.

During the 1990s, however, drought prevailed throughout the North China Plain, including the Yellow River basin. Two main tributaries, the Wei He and Fen He, were reduced to a bare trickle. Runoff dropped by 24% compared to the long term annual average. Furthermore, flow in the lower part

of the river dropped to 14% of its long term average. From 1995 to 1998, for some 120 days each year, there was no flow at all in the lowest 700 km of the river. This had serious repercussions, such as extreme water shortages in downstream provinces, the inability to flush sediment out to sea, and impaired sustainability in the delta ecosystem and coastal fisheries.

Since 1999 the scheme has managed to nominally end absolute flow cutoff, though the flow levels are sometimes so low as to be largely symbolic.

Managing water scarcity is now the number one priority in the Yellow River basin. Given the growing imbalance between supply and demand, it is difficult to meet any new water demand from one sector without lowering supply to the others. It is clear that hard choices will have to be made to address these diverging needs. Since agriculture is by far the largest consumer of water, one unavoidable conclusion is that water supply to agriculture must be reduced and new ways found to make agricultural water use more efficient.

overexploitation of groundwater resources has been a serious concern, particularly in the large and mid-size cities along the Yellow River. Springs in Jinan, once known as ‘the city of springs’, dried up in the late 1990s. Overall, groundwater levels have dropped significantly in 65 locations due to extensive withdrawals.

The biggest direct impact of a booming economy coupled with rapid industrialization and population growth was on water quality. For example, the amount of untreated industrial sewage being dumped into the Yellow River has doubled since the 1980s to 4.2 billion m<sup>3</sup> per year. The river receives over 300 pollutants, and only about 60% of its course is now fit for drinking water supply. The reduction in quality has caused environmental problems and contributed to the reduction in quantity. Under the Water Pollution Protection Law, a legislative framework for better protection of water resources is being prepared. Necessary regulations and effluent standards have also been formulated. In parallel, the Water Resources Protection Law on the Yellow River Basin is being modified.

As a result of intensive water development between 1951 and 1987, many structures were built in the basin for flood control, hydropower and irrigation. In 2000, there were over 10,000 reservoirs in operation, with total storage capacity of 62 billion m<sup>3</sup>; 23 involve large dams. Hydropower production in the basin amounts to 40 TWh per year.

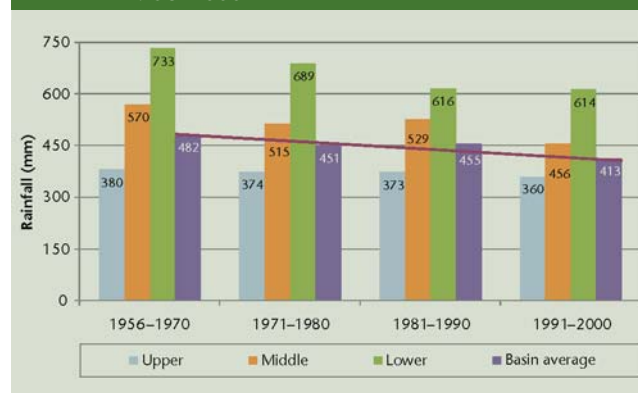
The expansion of irrigation in the basin has been rapid. The irrigated area rose from 8,000 km<sup>2</sup> in 1950 to 75,000 km<sup>2</sup> in 2000. Demand for irrigation water grew steadily, reaching 38.1 billion m<sup>3</sup> in 2000 (Li, 2005; YRCC, 2007). Although the trend stabilized in the early 1980s and agricultural water use has decreased since 2000 in accordance with the Yellow River Water Allocation Scheme, agriculture still accounts for 84% of total water consumption, followed by industry with 9% and households with 5%. The remaining 2% goes for environmental use (2006). When consumption exceeds water availability in the basin, the deficit is met by using groundwater resources outside the basin, as well as recycling.

### Policy framework and decision-making

On a national scale, increasing water consumption due to the booming economy has led to water shortages. Consequently, the central government has increased its investment in the water sector and enacted legislation to alleviate water scarcity and assure continued economic growth. Many laws were passed in the 1990s, such as the Water Law, the Soil and Water Conservation Law, the Flood Control Law, the Environmental Protection Law, the Fishery Law, the Forestry Law and the Mineral Resources Law. Some related administrative rules and regulations for water management were also promulgated. In 2002, a new Water Law, emphasizing integrated water resources management, was passed. It has paved the way for a transition from engineering-dominated and demand-based development to a resource-oriented strategy that focuses on water availability.

At basin level, the Yellow River Conservancy Commission (YRCC), established in 1946, manages the water resources of the basin on behalf of the Ministry of Water Resources and the State Council. The YRCC prepares and implements the basin water development plan, decides the allocation of water resources at provincial level and is in charge of constructing and maintaining structures (except large dams) for water resource development and flood prevention.

Figure 2.2 Rainfall in various reaches of Yellow River basin, 1956–2000



Source: YRCC, 2002.

## 2. Asia and the Pacific

The water allocation is based on the integrated scheme approved by the State Council in 1987 (see Box 2.1). The provinces in the middle reach of the basin are allocated 22% of the available flow. The remainder is split equally between the provinces of the upper and lower reaches. The allocation is revised annually to reflect seasonal variations in availability.

Since 2000, in line with the most recent approach adopted by the Ministry of Water Resources, water management and related development activities in the Yellow River basin have aimed to integrate the interests of all regions and sectors. Consequently, to balance available water supply and the demand of various sectors, the YRCC developed a water use plan based on medium to long term supply and demand patterns. Annual water use plans are issued to users to assure adequate supply for priority areas, especially in the case of drought. Furthermore, the YRCC established regulations encouraging household users to install water-saving devices, farmers to adopt water-efficient practices and industry to promote techniques minimizing water use and waste discharge. It also established a market pricing system.

### The main challenges

**Managing sedimentation:** The Yellow River gets its name from the colour of the heavy sediment concentration that it transports while flowing through an extensive loess plateau covering 640,000 km<sup>2</sup>. The loose soil of the plateau is easily eroded, and it is carried into the Yellow River and its tributaries in massive quantities, particularly during the intense summer rainstorms. The average sediment load that the river carries is 1.6 billion tonnes per year. Of this, only about 25% is carried to the sea, while the rest is deposited on the riverbed. Due to this sedimentation, the riverbed has risen at an average rate of 5 to 10 cm per year and the dikes have been periodically raised in response. The impact of sedimentation on channel dynamics has made management of the river difficult, especially in its lower reaches.

**Meeting environmental water requirements:** Due to problems associated with the heavy sediment load of the river, the YRCC has made flushing out sediment its most critical environmental priority. Protecting biodiversity and sustaining the wetlands and fisheries at the mouth of the river are also important environmental concerns. The minimum flow required to flush out sediment is calculated as 14 billion m<sup>3</sup>, and an additional 5 billion m<sup>3</sup> is necessary for other environmental requirements. With the surface water capacity almost fully used already, and with industrial, urban and agricultural demand growing as well as climatic variation putting further stress on the resource, assuring the required minimum environmental flow, which roughly equals one-third of total average annual flow, is a very difficult challenge to address.

**Coping with floods and droughts:** Millions of lives have been lost to floods and droughts during the long history of the Yellow River basin. From 206 BC to AD 1949, 1,092 major floods were recorded, along with 1,500 dike failures, 26 river rechannellings and 1,056 droughts. The flat North China Plain, which was formed by alluvial

deposits from the Yellow River, was always prone to floods. However, following the establishment of the People's Republic of China in 1949, master planning for flood control and construction of numerous hydraulic structures significantly reduced the vulnerability and losses due to floods.

Embankments, reservoirs and flood retention areas have been established to increase flood control and enable drought management (see Box 2.1). The structural flood control system in China is designed basically for the discharge capacity of the maximum flood recorded since the 1950s for large rivers, and for five- to ten-year flood frequency for smaller rivers.

Non-structural flood control measures have been improved, mainly by developing and applying flood forecasting and warning systems, and by implementing laws, regulations, policies and economic approaches. These include managing river channels and controlling settlement in flood-prone areas. Potential flood risks are being reduced to a level which the society and economy can address, and flood management schemes have been established for extremely large floods.

The YRCC and the provinces of Shanxi, Shaanxi, Henan and Shandong have jointly set up a Yellow River flood control and drought relief headquarters, which provides crucial input to planning for such disasters and mitigating their impact.

### Conclusions

Throughout history, the Yellow River basin has been associated with floods, droughts and a rising river bed. With large population increases, combined with rapid growth in all sectors, declining water quality and quantity have had a direct impact on the sustainable socio-economic development of the basin and the health of ecosystems. The water allocation scheme introduced in 1987 and various laws and regulations enacted in the 1990s aim to address these problems while taking a holistic approach that addresses the requirements of all stakeholders. However, the need to strike a balance between water demand for various sectors, sediment management and some serious pollution issues remains the major challenge facing the Yellow River Conservancy Commission and the ministries concerned.

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Tending to the ailing 'mother river of China', p.16

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## IN THIS ISSUE

### IN FOCUS

- 2 The thrill of drilling

### NEWS

- 10 Poles warming faster than expected
- 10 Denmark gets behind climate change education
- 11 Ten years to save coral reefs
- 12 Awards for exceptional women
- 12 2011 to be Year of Chemistry
- 13 Pierre Auger Observatory inaugurated
- 13 Optics prize for Iranian

### INTERVIEW

- 16 Jacques Weber on why the financial crisis is also an opportunity

### HORIZONS

- 16 Tending to the 'ailing mother river of China'
- 19 Of shipwrecks, lost worlds and grave robbers

### IN BRIEF

- 24 Diary
- 24 New releases

## EDITORIAL

# The other crisis

**W**ater is too important to be left solely to water professionals. This is the message of *Water in a Changing World*, the third World Water Development Report, presented to the World Water Forum in Istanbul (Turkey) by UNESCO on 16 March, on behalf of 26 UN bodies.

The report hopes to persuade governments to show more interest in their 'blue gold'. Current investment in water is negligible compared to the sums being channelled into the financial crisis and into reducing carbon emissions – even though water supplies will be one of the casualties of climate change. 'Water should be at the heart of policies for agriculture, energy, health, infrastructure and education', insists Olcay Unver from UNESCO, coordinator of the report.

The authors observe that the water crisis will deepen in coming decades if foreseeable problems are not anticipated. Demand for water has never been higher, a trend set to continue as the global population swells to 9 billion by 2050, urban dwellers come to outnumber their rural counterparts, energy production rises, standards of living climb and eating habits evolve. By 2030, nearly half of humanity (47%) will be living in water-stressed areas.

Prosperous societies consume a lot of meat. And thus a lot of water, for it is the water we eat, not the water we drink, which determines how much we consume. Producing 1 kg of wheat requires 800–4000 litres of water, compared to 2000–16000 litres for 1 kg of beef. In 2002, Swedes ate 76 kg of beef each per year and Americans as much as 125 kg. Emerging economies are, in turn, developing a taste for meat. It is estimated that the Chinese consumer who ate 20 kg of meat in 1985 will eat over 50 kg in 2009. This means China will need an additional 390 km<sup>3</sup> of water. Yet, as we shall see in a case study taken from the report, managing water scarcity is now the top priority along the Yellow River, the second-longest in China.

Then there is the energy we are 'growing'. It takes 1000–4000 litres of water to produce just 1 litre of biofuel. Biofuel production may still be small-scale – the ethanol share of the transport fuel market was estimated at 4.5% for the USA, 40.0% for Brazil and 2.2% for the European Union in 2008 – but it is rising steadily: after tripling between 2000 and 2008 to 77 billion litres, it should reach 127 billion litres by 2017.

Energy demand could climb by as much as 55% by 2030, nearly half of which may stem from China and India alone. This means that, despite their heavy ecological footprint and social impact, dams are here to stay: electricity generation from hydropower is projected to increase at an average annual rate of 1.7% from 2004 to 2030, an overall increase of 60%. The report argues that water storage in Africa, at just 4% of capacity compared to more than 70% in most of the developed world, will have to increase to serve both energy production and all the continent's other water needs.

How do you persuade governments to act? For economist Jacques Weber, economics holds the key. In this issue, he explains why the current financial crisis is a consequence of the growing scarcity of natural resources – and why this makes it a golden opportunity to 'green' the global economy.

W. Erdelen  
Assistant Director-General for Natural Sciences

# Tending to the ailing 'mother river of China'

The Yellow River is the second-longest river in China after the Yangtze River and the sixth-longest in the world. Home to 110 million people in 2000, it is the cradle of northern China's civilizations and the centre of China's current political and socio-economic development: the basin produces 6.8% of the country's GDP.

Affectionately known as 'the mother river of China', the Yellow River is also plagued by prolonged droughts, floods, sedimentation and severe pollution. This year's drought is shaping up to be the worst in half a century. What effect will a warming climate have on the water supply, in a region whose rapidly growing population may tip the balance at 121 million by 2010? In the meantime, the health of ecosystems is deteriorating as booming agricultural, industrial and urban sectors all vie for resources which are being stretched to the limit.

The following case study was prepared by the Yellow River Conservancy Commission (YRCC) for *Water in a Changing World*, the Third World Water Development Report released on 16 March. The YRCC acknowledges that both it and relevant ministries are going to have to strike a balance between competing sectors and take remedial measures if they are to protect 'the river mother of China' – and safeguard the future of more than 120 million Chinese.

The Yellow River originates on the Qinhai–Tibetan plateau in western China. From here, it runs for 5500 km across the vast North China Plain, traversing nine provinces before draining into the Bo Hai Sea about 250 km south of Beijing (*see map*).

The average temperature in this mountainous zone varies during the year from 4°C to 14°C. More than 60% of precipitation falls between June and September each year, during the crop-growing season. In the 1990s, rainfall was about 7.5% below the average for previous decades owing to drought (*see overleaf The drought decade*).

Xu et al<sup>5</sup> predict that annual temperatures in the basin could rise by as much as 3.9% by 2080 and rainfall by 8.7%, although they expect stream flow to drop over the same period. There could be a critical water shortage in the basin



Water sampling in E-Ling Lake near the source of the Yellow River

in the coming century if more efficient use is not made of water, via better management and the adaptation of technology. The following are some of the main challenges.

## Overexploitation of groundwater

Water demand in the basin grew sharply between 1949 and 2006 from 10 billion m<sup>3</sup> to nearly 38 billion m<sup>3</sup>. Since tube wells were introduced in the 1950s, their number has grown to 380 000. By 2000, 11 billion m<sup>3</sup> of groundwater was being extracted annually. Overexploitation of groundwater in the large and medium-sized cities in particular has become a serious problem. Once known as 'the city of springs', Jinan for example watched its springs dry up in the 1990s. Overall, groundwater levels have dropped significantly in 65 locations due to extensive withdrawals.

## The river is becoming undrinkable

The quality of water has paid the highest price for a booming economy and rapid industrialization coupled with population growth. The amount of untreated sewage being dumped into the Yellow River has doubled since the 1980s to 4.2 billion m<sup>3</sup> per year. The river receives over 300 pollutants and only about 60% of its course is now fit for drinking.

Under the Water Pollution Protection Law, a legislative framework for protecting water resources was under preparation in 2009. Regulations and effluent standards have also been formulated. In parallel, the Water Resources Protection Law on the Yellow River is being modified.



©Dong Baohua

Glacier lake at the source of the Yellow River on the Qinhai–Tibetan plateau





*The Yellow River has a catchment area of 795 000 km<sup>2</sup>. In 2000, about 26% of the basin was urbanized. It lies in two different climatic zones: arid and semi-arid continental monsoon in the north-west and semi-humid in the south-east*

It would be difficult to grow rice in the basin without irrigation, however. The main crops in the basin – wheat, maize, and soybean – give 50% higher yields or more with irrigation. It is these increases in yield and production that have driven the expansion of irrigation in the basin since the 1950s.

However, the development of irrigation is now widely believed to have reached its limit. It is felt that rainfed crop production (45% of the total) should be given higher priority in the next phase of basin development, as water becomes unavoidably scarce in the basin.

### An excessive use of water for irrigation

Between 1951 and 1987, many structures were built on the river for flood control, hydropower and irrigation. In the 1970s, large dams were constructed in the upper basin, a soil conservation campaign brought in new terrace croplands on the Loess Plateau in the middle reaches and irrigation diversions were substantially expanded in the lower reaches. By 2000, there were over 10 000 reservoirs in operation, 23 of which involved large dams, with a total storage capacity of 62 billion m<sup>3</sup> – exceeding the annual basin runoff. Hydropower production in the basin currently amounts to 40 TWh per year.

The expansion of irrigation has been rapid: from 8000 km<sup>2</sup> in 1950 to 75 000 km<sup>2</sup> in 2000. Although demand for irrigation stabilized in the 1980s and agricultural water use has decreased since 2000, in accordance with the *Yellow River Water Allocation Scheme*, agriculture still accounts for 84% of total water consumption, followed by industry (9%), households (5%) and environmental use (2%). When consumption exceeds water availability, the deficit is met by using groundwater outside the basin or by recycling.

With industrial demand and environmental awareness growing, even as supplies reach their limit, pressure is building to increase the efficiency of agricultural water use. The YRCC has instituted a plan to reduce basin agricultural water consumption by 10% by 2010.



*On these terraced slopes on the Loess Plateau in the middle reaches of the Yellow River basin, lines of green plants anchor the soils. This traditional local method prevents soil erosion and conserves water. The green plants also provide local communities with an alternative source of income to farming*

### Managing sedimentation

The Yellow River gets its name from the colour of the heavy sediment concentration that it transports while flowing through an extensive loess plateau covering 640 000 km<sup>2</sup>. The loose soil of the plateau is easily eroded; it is then carried into the Yellow River and its tributaries in massive quantities, particularly during the intense summer rainstorms.

The average sediment load that the river carries is 1.6 billion tonnes per year. Of this, only about 25% is carried to the sea, the rest being deposited on the riverbed. Owing to this sedimentation, the riverbed has risen at an average rate of 5–10 cm per year and the dykes have been periodically raised in response. The impact of sedimentation on channel dynamics has made managing the river difficult, especially in its lower reaches.

The YRCC has made flushing out the heavy load of sediment its most critical environmental priority, in tandem with protecting biodiversity and sustaining the wetlands and fisheries at the mouth of the river. The minimum flow required to flush out sediment is calculated as 14 billion m<sup>3</sup>, with an additional 5 billion m<sup>3</sup> being necessary for other environmental requirements. However, it is difficult to ensure the required minimum environmental flow in the river when surface waters are already being used to the maximum.

### Coping with floods and drought

Millions of lives have been lost to floods and drought during the long history of the Yellow River basin. From 206 BC to AD 1949, 1092 major floods were recorded, along with 1500 dyke failures, 26 river rechannellings and 1056 droughts. The flat North China Plain, which was formed by alluvial deposits from the Yellow River, has always been prone to floods.

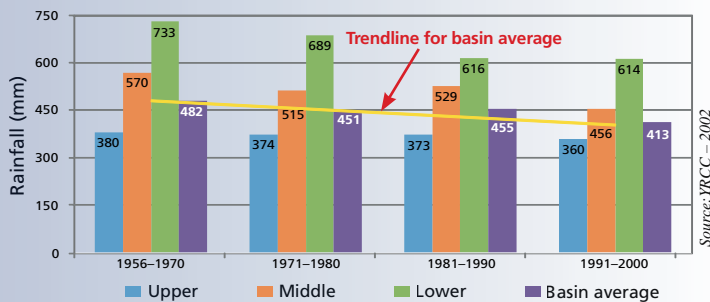
## The drought decade

In 1987, the State Council of China established a Yellow River Water Allocation Scheme to balance available supply and actual demand better by setting a cap on water abstraction of 37 billion m<sup>3</sup> per year for average runoff of 58 billion m<sup>3</sup>. The provinces in the middle reach of the basin were allocated 22% of the available flow, the remainder being split equally between the provinces of the upper and lower reaches. The allocation is revised annually to reflect seasonal variations in water resource availability.

During the 1990s, however, this scheme was sorely tried: drought prevailed throughout the North China Plain, including the Yellow River basin. Two main tributaries, the Wei He and Fen He, were reduced to a trickle. Runoff dropped by 24% and flow in the lower reaches of the river to just 14% of the long-term annual average. From 1995 to 1998, for some 120 days each year, there was no flow at all in the lowest 700 km of the river. This had serious repercussions, including extreme water shortages in downstream provinces, the inability to flush sediment out to sea and impaired sustainability in the delta ecology and coastal fisheries.

Since 1999, the scheme has managed to prevent the riverbed from drying up completely, although flow levels are sometimes so low as to be largely symbolic.

Managing water scarcity is now the number one priority in the Yellow River basin. Given the growing imbalance between supply and demand, it is difficult to meet any new water demand from one sector without lowering supply to the others. It is clear that hard choices will have to be made to address these diverging needs. Since agriculture is by far the largest consumer of water, one unavoidable conclusion is that water supply to agriculture must be reduced and new ways found to make agricultural water use more efficient.



Rainfall in various reaches of Yellow River basin, 1956-2000

Following the establishment of the People's Republic of China in 1949, master planning for flood control and the construction of numerous hydraulic structures significantly reduced this vulnerability and losses due to floods. Embankments, reservoirs and flood retention areas were all established to increase flood control and enable drought management. The structural flood control system in China is designed basically for the discharge capacity of the maximum flood recorded since the 1950s for large rivers and for five- to ten-year flood frequency for smaller rivers.

Non-structural flood control measures have been improved, mainly by developing and applying flood forecasting and warning systems and by implementing laws, regulations, policies and the laws of economics. These measures include managing river channels and controlling settlement in

flood-prone areas. The YRCC and the provinces of Shanxi, Shaanxi, Henan and Shandong have jointly set up a Yellow River flood control and drought relief headquarters.

## Controlling a growing thirst

In the 1990s, the central government passed a slew of laws to alleviate water scarcity nationwide and ensure the pursuit of China's economic miracle, at a time of growing public environmental awareness. This legal arsenal includes the Water Law, the Soil and Water Conservation Law, the Flood Control Law, the Environmental Protection Law, the Fisheries Law, the Forestry Law and the Mineral Resources Law. In 2002, a new Water Law emphasizing integrated water resources management hailed a transition from engineering-dominated, demand-based development to a resource-oriented strategy focusing on water availability.

Established in 1946, the YRCC manages the Yellow River basin on behalf of the Ministry of Water Resources and the State Council. The YRCC prepares and implements the basin water development plan, decides on the allocation of water resources at the provincial level and is in charge of constructing and maintaining structures – except large dams – for water resource development and flood prevention.

Since 2000, the YRCC has developed a water-use plan based on medium- to long-term supply and demand patterns to balance available water supply and demand from the various sectors. Annual water use plans are issued to users to ensure there is an adequate supply for priority areas, especially in the event of drought. The YRCC has also established regulations encouraging household users to install water-saving devices, farmers to adopt water-efficient practices and industry to promote techniques minimizing water use and waste discharge. It has also established a market pricing system.

Today, a legal arsenal is in place to curb water pollution and overuse, via a holistic approach that addresses the needs of all stakeholders. In parallel, efforts are being made to strike a balance between the water demands of competing sectors. Will this suffice to restore the 'river mother of China' to her former glory? Only time will tell.

*The preparation of this case study was facilitated by UNESCO's office in Beijing under the Spanish Millennium Development Goal project to develop a China Climate Change Partnership Framework.*

- Xu, Z. X.; Zhao, F. F.; Li, J. Y. (2006 or 2007) Impact of climate change on stream flow in the Yellow River Basin: [www.ifwf2.org/addons/download\\_presentation.php?fid=1077](http://www.ifwf2.org/addons/download_presentation.php?fid=1077)

**Annex II:**  
**Proposed Budget Revisions by Agency for 2008 Programme  
Implementation of China Climate Change Partnership Framework<sup>1</sup>**

**31<sup>st</sup> August 2008**

**Contents:**

**Annex Ic: Activities 2.1.2**

<sup>1</sup> "Original budget figures" (USD) as per the China Climate Change Partnership Framework Year II Annual Work Plan approved by National Steering Committee in May 2009.

Key Indicative Activity No: 2.1.2		Original Budget US\$ (I)	Revised Budget US\$ (II)	Balance US\$ (III) (II-I = III)	Justification
<b>Expenditure</b>					
1	Supplies	2,400	597,400	595,000	- Under the original overall project work plan for project it was initially determined that the project counterpart (Ministry of Agriculture) would select a procurement agent and UNIDO would sub-contract this agent to procure all the necessary equipment for the two pilot plants. However, during an evaluation (to which the two potential pilot brick factory owners were invited too), of an existing HRPG plant within an experimental facility it was determined that the potential pilot plant operators would demand that the best possible equipment should be utilized – therefore, probably leading to international bidding. Given UNIDO’s experience and capacity in international procurement, it has been determined that UNIDO should directly procure the equipment under international bidding conditions as determined by the specifications of the engineering designs for both pilot plants. Therefore, the required funding (US\$ 595,000) must be moved from the Contract BL onto the Supplies (Equipment) BL. This revision does not affect the project’s intended outputs or outcomes.
2	Personnel Local	80,100	80,100	0	
	Personnel Int'l	5,000	5,000	0	
3	Contracts Local	805,000	195,000	-610,000	- As above - In addition, the additional funds required to fund an expanded CDM study (US\$ 15,000) is reallocated from the Local Contracts to International Contracts. This revision does not affect the project’s intended outputs or outcomes.
	Contracts Int'l	90,000	105,000	15,000	- After discussing the CDM Study as planned for in the Year 2 AWP with a number of external CDM companies, the original sum of US\$ 35,000 has been determined to be insufficient and therefore the funding allocation has to be increased by a further US\$ 15,000 to a total of US\$50,000. This revision does not affect the project’s intended outputs or outcomes.
4	Training of counterparts	0	0	0	
5	Other Direct costs	7,500	7,500	0	
Subtotal		990,000	990,00	0	
6	Indirect Costs	69,300	69,300	0	
Total		1,059,300	1,059,300	0	