The Detailed Plan of the AB – ESD/Education on ABR under the Sino-Swedish ABR cooperation

- the part to be implemented by the Swedish part

The plan has been worked out in coordination with the Chinese counterpart and the Swedish partners in the project.

The project is established as a sub-project to the Sino-Swedish cooperation on ABR, based on longstanding working relations between China and Sweden in the areas of health, education and sustainable development.

The activities will be optimized according to the national conditions and context in China and Sweden respectively. The mutual benefit, the bilateral development of the project as well as the contribution of education on ABR for sustainable development outside China and Sweden will be promoted by a close communication and fruitful exchange between the project managers and the working groups. The aim is to maximize the cross-fertilization between the work being carried out in China and Sweden during the process.

Project background

The World Health Organization calls antibiotic resistance one of the three greatest threats to human health, and the dimensions of its hazards to human welfare are comparable with the threat of climate change.

Efficient measures to deal with issues related to antibiotics and antibiotic resistance globally are therefore a prerequisite for sustainable development, and needs to be further integrated into concepts for sustainability.

Within the framework of the part relating to antibiotic resistance in the Sino-Swedish joint action plan for health cooperation signed in October 2010, the promotion of the integration of antibiotics as a component of existing education for sustainable development (ESD) being a forceful driver in the process to include antibiotics into internationally guiding documents on sustainable development, has been given high priority. The Chinese and Swedish parts have stated their intention to work out Chinese and Swedish models for education on rational use of antibiotics adapted for preschool and school children.
Education on rational use of antibiotics adapted to the curriculum of school children of different ages is envisioned to be a cost-efficient way to change attitudes and prevent antibiotic overuse.

*Agenda 21* was the first international document that identified education as an essential tool for achieving sustainable development and highlighted areas of action for education. Ever since the Rio Declaration public health in conjunction with a healthy ecosystem has been part of the definition of sustainable development.

"Health promotion" is also one of eight themes listed under the UNESCO definition of ESD. “Education and basic medical information are powerful ways to drive behavioural change. The school environment itself must be safe and healthy. Schools should act not only as centres for academic learning, but also as supportive venues for the provision of essential health education and services, in collaboration with parents and the community.” ([http://www.unesco.org/en/education-for-sustainable-development/themes/health-promotion/](http://www.unesco.org/en/education-for-sustainable-development/themes/health-promotion/))

UNESCO currently leads the Decade of Education for Sustainable Development (DESD) 2005-2014, which was launched by the UN General Assembly in 2002. The DESD aims at changing the approach to education globally so that it integrates the principles, values and practices of sustainable development. The Sino-Swedish project on AB-ESD has a great potential to promote the integration of education on rational use of antibiotics into ESD under the auspices of the DESD.

ESD in its real and effective forms gives the students the skills, perspectives, values and knowledge to live sustainably in their communities. Environmental Education (EE) is a key component of ESD, and for many schools implementing EE/ESD from the seventies and onwards the environment, the ecosystem and resource saving have been in focus, whereas the broader definition of sustainable development encompassing socioeconomic factors has expanded the scope of the ESD in a more multidisciplinary direction.

One of the key actors for EE/ESD which has included health in their concept is the Foundation for Environmental Education (FEE), a large international umbrella organization with members in 66 countries worldwide. FEE is the organizer of the eco-schools programme which works with themes including both more “traditional” environmental areas, like water and waste, and local Agenda 21, lifestyle and health. The Chinese and Swedish members of FEE – China Green Schools under the Centre for Environmental Education and Communications (CEEC) under the China Ministry of Environmental Protection (MEP) and the Swedish counterpart Green Flag which is being managed by the Swedish NGO, “Keep Sweden Tidy” – are both in the core of the Sino-Swedish project for AB-ESD.

The multidisciplinary approach of ESD corresponds well to the multi-facetted nature of the consequences of antibiotic use, which include both health, socioeconomic and environmental aspects, and affects the whole ecosystem. In the ESD lessons could be taught on a wide range of aspects related to antibiotics, to give a few examples:

- differences between virus and bacteria
- hand hygiene, other hygiene measures and vaccines as a prevention against
infections
- the function and value of “good” bacterias
- antibiotics in animal husbandry
- antibiotics and water management
- the transportation of antibiotics through the ecosystem
- impacts of climate change on antibiotic resistance

Aim and objective for AB-ESD in China and Sweden

- To promote public education and information promotion on the rational use of antibiotics.
- Support the development of an educational model on antibiotic use and antibiotic resistance targeting schools in China and Sweden.
- Increased common knowledge regarding antibiotic use and antibiotic resistance among Chinese and Swedish citizens, in particular children.

Methodology

The project will be carried out using already existing structures and efficient channels for education on sustainable development (ESD), put in place through the networks of Green Schools in China, OMEP and Green Flag in Sweden.

Pilot areas, communities and schools will be assigned in different regions of China and participants on the Swedish side will be engaged in the implementation by invitation through the relevant networks. The target groups will include preschool- and school children and their parents, school teachers, officials, journalists and patients.

Planning, implementation and experiences from activities in the project on the Chinese and Swedish side will be communicated and exchanged regularly. The working groups will meet at an estimated frequency of two or three times a year at seminars where participants in the target groups of the project will be invited to take part. Depending on the financial situation at the different stages of the project, representatives from other parts of the world working on education on antibiotics will be invited to promote exchange and the establishment of international networks.

The proceeding of the implementation of the project will be evaluated by experts on didactics and education for sustainable development from Beijing Normal University on the Chinese side, and by corresponding researchers on the Swedish side. The results will be compiled and reported twice per year and exchanged with the other Sino-Swedish working groups in the bilateral cooperation on antibiotic resistance.
The project group will establish communication with authorities in charge of issues relating to antibiotics and education. In Sweden those are the county councils which are in charge of health care, and the city councils which are in charge of education, water and waste management and health care for the elderly. This is to promote the integration of issues related to antibiotic resistance into guiding documents and strategies for sustainable development which will strengthen the institutional support for education on antibiotics and to promote the coordination between county and city in the work to contain antibiotic resistance.

Existing information and teaching material on antibiotics and antibiotic resistance targeting the non professional public will be compiled and analyzed. The relationship between the rational use of antibiotics and sustainable development will be defined from a multidisciplinary perspective as a framework for the working out of modules and teaching material for teachers, preschool- and school children, to facilitate the integration of the new component into current curricula.

The maximum use of synergies with health education initiatives working to promote the education on rational use of antibiotics, as well as Health Promoting Schools already integrating the health component in ESD, will be promoted throughout the project.

Biomedical expertise will be combined with resources in complementary fields of knowledge comprising of multidisciplinary approaches to the issue of antibiotic resistance.

Specialists on didactics and normative changes will provide their expertise on how the knowledge on rational use of antibiotics should be adjusted to different age groups, and how the teaching material and methods should be worked out to optimize the effect of the education.

The Chinese and Swedish parts of the working group will work jointly to identify common ground and differences in the socio-cultural contexts requiring special attention for the safeguarding of the quality and efficiency of the project.

The project group will work according to the “educate the educators”/“train the trainers”- principle, and build up the knowledge among decision makers and teachers to establish a solid foundation for the teaching of the preschool, school children and their parents.

The project will have the teaching of preschool and school children as a core activity and starting point, but will in the next step proceed to expand the target groups for the education on antibiotics to encompass other key actors, like journalists, officials and patients. The tools and content of the education will be adjusted accordingly.

Financing permitting, the exchange between participating Chinese and Swedish schools will be promoted through internet and personal visits.

Expected outcome
The project is foreseen to:

- contribute to make education on antibiotics a regular concern for Chinese and Swedish authorities, and integrate antibiotics in preschool and school education as a component of the national strategies on the containment of antibiotic resistance

- be a catalyst for making the education on antibiotics a common global issue

- define useful knowledge on rational use of antibiotics and antibiotic resistance which can be taught to preschool and school children

- adapt the knowledge related to antibiotics to different age groups of children

- result in the creation of new materials and methods for teaching school children about the rational use of antibiotics and antibiotic resistance

- result in the creation of models for the integration of antibiotics into existing ESD through the “China Green Schools”, OMEP and “Green Flag” networks which can be applied on a larger scale after thorough evaluation and analysis

- lead to the establishment of relations between county and city councils in their work to contain antibiotic resistance, to promote the integration of antibiotic resistance into local political strategies on sustainable development, thereby strengthening support from the city councils for the development of modules for education on the rational use of antibiotics for preschool- and school children

- promote the strengthening of the general public awareness and knowledge on antibiotic resistance through the school projects

- adjusted models of the education on rational use of antibiotics for other key actors in society, like officials, media and patients

- make education on the rational use of antibiotics a Sino-Swedish contribution to UNESCO’s DESD, thereby promoting the inclusion of antibiotic resistance as a part of UNESCO’s definition of health as an important theme for sustainable development

### Log frame matrix

<table>
<thead>
<tr>
<th>Objective</th>
<th>Activities</th>
<th>Expected results</th>
<th>Indicators</th>
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<tbody>
<tr>
<td>The current baseline for information on the rational use of antibiotics to the public in general and to children in particular</td>
<td>To compile and analyse available information and education for the public and for school children on the rational use of antibiotics</td>
<td>An overview of the current status of education on rational use of antibiotic as a starting point for developing teaching material for the project</td>
<td>Quantity, scope and content and channels of information on rational use of antibiotics currently available for the general public and for school</td>
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<tr>
<td>Task</td>
<td>Frequency of correct answers to general questions on antibiotics and antibiotic resistance</td>
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<tr>
<td>Conduct surveys in the pilot groups of the project</td>
<td>Indication on the current level of knowledge and awareness on issues related to antibiotics within the target groups</td>
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<thead>
<tr>
<th>Task</th>
<th>Definitions and descriptions of the multidisciplinary nature of antibiotics and antibiotic resistance which can be adapted for ESD</th>
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<tbody>
<tr>
<td>Meetings with researchers from different research areas to discuss the multidisciplinarity of issues related to antibiotic resistance, focusing on the relationship between education for antibiotics and antibiotic resistance and ESD, which will be complemented by questionnaires and interviews</td>
<td>Research areas involved in the definitions and descriptions, and their related experiences</td>
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<thead>
<tr>
<th>Task</th>
<th>Defined modules for education on antibiotics adjusted for different age and target groups and adapted to different teaching tools</th>
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<tbody>
<tr>
<td>Define the interrelatedness of antibiotics with other issues of sustainable development</td>
<td>Number of modules and teaching materials adjusted for different target groups and.</td>
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<tr>
<th>Task</th>
<th>Work with specialists in biomedicin, didactics, normative change, human ecology, etc through meetings and over mail</th>
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<tbody>
<tr>
<td>Define the knowledge on rational use of antibiotics which is useful for different age and target groups</td>
<td>Defined modules for education on antibiotics adjusted for different age and target groups and adapted to different teaching tools</td>
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<tr>
<th>Task</th>
<th>Conduct pilot teaching and learning experiments</th>
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<tbody>
<tr>
<td>Define the channels, tools and teaching material most suitable for each teaching situation and target group</td>
<td>Number of modules and teaching materials adjusted for different target groups and.</td>
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<tr>
<th>Task</th>
<th>Initiate joint meetings and seminars with the county and city councils together with the related stake-holders, including researchers to present the project and ideas of antibiotics and sustainable development</th>
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<tbody>
<tr>
<td>To promote the integration of antibiotic resistance as part of guiding documents and strategies on sustainable development at the county and city councils</td>
<td>Support from the county and city councils for the education on antibiotics-project</td>
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<tr>
<th>Task</th>
<th>Numbers of contacts and meetings with the councils and documented support from their side for the education project</th>
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<tbody>
<tr>
<td>To promote the coordination between</td>
<td>Number of contacts and meetings with the councils and documented support from their side for the education project</td>
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the county and city councils on the issue of antibiotic resistance, and obtain support for education on the rational use of antibiotics.

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<tr>
<th>Printed handbook and teaching material</th>
<th>Joint writing and editing with a group of experts in biomedicin, didactics normative change and education for sustainable development as well as persons skilled in layout, etc</th>
<th>Handbooks and teaching material with a small Sino-Swedish overlapping part, marking the bilateral nature of the project</th>
<th>Number of books and booklets, and number of users</th>
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<tbody>
<tr>
<td>A good knowledge base and awareness of the issue of antibiotic resistance among officials, school leaders and teachers in charge of the education of the preschool and school children</td>
<td>Training sessions carried out by CEEC on the Chinese side</td>
<td>A solid foundation, awareness and knowledge in the group of officials in charge of the implementation of the education on rational use of antibiotics for preschool and school children</td>
<td>Number of training sessions, trained persons and their response regarding the outcome of the training</td>
</tr>
<tr>
<td>Sino-Swedish seminars with the working group</td>
<td>Seminars organized and carried out by CEEC and LU jointly</td>
<td>Planning of the Sino-Swedish working process for the education on antibiotics, update on activities and exchange of information on AB-ESD and comparisons of different experiences</td>
<td>Reports and other documentation from the seminars</td>
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<tr>
<td>Reaching out to other target groups than preschool and school children</td>
<td>Define other target groups in coordination with the Sino-Swedish working group, adjust the content of the education material and provide training financing permitting combined with updated information on available websites, through e-mail, regular media channels and workshops.</td>
<td>Promotion of a higher level of knowledge and awareness of issues related to antibiotic resistance among patients, journalists and other target groups outside the schools, and an increased media focus on the issue of antibiotic resistance.</td>
<td>Report on the channels, information and target groups</td>
</tr>
<tr>
<td>Exchange between Chinese and Swedish schools</td>
<td>Mutual visit between Swedish and Chinese pilot schools</td>
<td>Deepened bilateral understanding and learning from each others experiences on AB-ESD and the achievements of the project</td>
<td>Media release and visit reports</td>
</tr>
<tr>
<td>Evaluation and reporting</td>
<td>Compilation of documentation and reports, which will be analyzed and summarized through meetings and</td>
<td>Summary and analysis of the experiences and knowledge</td>
<td>The evaluation report</td>
</tr>
</tbody>
</table>
Target groups for AB-ESD/Education on ABR in Sweden

The project in the first phases target similar groups in Sweden and China. Those include teachers, parents and children enrolled in preschools and schools within the network of OMEP Sweden and the network of Green Flag under the Keep Sweden Tidy Foundation. Raising young peoples’ awareness and knowledge about sustainable use of antibiotics is an important step towards long-term public health improvement. By educating teachers, the knowledge on the rational use of antibiotics in preschools and schools can be safeguarded as a base for the education to the children, and can be spread several times to many groups of children. Within the group of Swedish partners for the project there are also structures in place which support this effect, like the Green Schools concept which ensures that material and experience can be shared over time.

Project content

Compiling currently available teaching and information material on AB for teachers and children (June-July 2011)

The AB-ESD working group will compile currently available teaching material on ABR for teachers and children, which is available in Sweden, including printed materials, multimedia and internationally available information over the internet. The group will also collect articles and other information on international experiences with education on AB. In this part as in all applicable components of the plan, the Chinese and Swedish parts will share their findings and jointly compile their results.

Initiate the process to integrate ABR in concepts for sustainable development in Sweden (June 2011-June 2012)

The AB-ESD working group will initiate the communication between the county councils and the city councils on the integration of ABR into the cities’ strategies for sustainable development. This trial will be carried out in the cities of Malmö/Lund, Gothenburg and Stockholm/Uppsala. The aim is to create a sustainable structure for AB-(SD)ESD in Sweden, where the issue of ABR will be highlighted through the
guiding documents on sustainable development of the city councils. This process is expected to contribute to the support for the activities at the pilot schools in AB-ESD in Sweden.

Pilot areas

The AB-ESD working group will be in charge of selecting local preschools and schools, as well as child health care centres for the activities within the project. The main areas for activities will be around the larger cities of Malmö/Lund, Gothenburg and Stockholm/Uppsala.

Editing material for dissemination July-December 2011

Using the good examples already produced by STRAMA, the project group will put together different kinds of teaching material for information on the rational use of antibiotics. Depending on the available funding this material could be booklets, children’s books, computer-based interactive information, games and music.

Preschools and schools within the networks of OMEP and Green Flag will be recruited to serve as pilots for the education project with the task to participate as resources during the design and editing of the material.

The different types of material will be produced during the period July – December 2011, starting with the booklets. Experts from STRAMA will be invited to provide the basic content and in the next phase when formulating the concept and first draft, specialists in early childhood education and care, primary and secondary school didactics and child health as well as professionals working for the project will give their input and support.

Parallel to producing the material the education project group will also produce a Curriculum and suggested planning for implementing the material in preschool, schools and child health centres.

Conferences on Education for Sustainable Development (ESD) November 2011-June 2013

The AB-ESD working group will arrange regional conferences on education for sustainable development in Sweden. Teachers, principals, health care professional, local representatives for departments of education, university students and teachers, NGOs and unions and politicians will be invited for a one day conference with

- Key note lectures on ESD and Managing Antibiotic Resistance

- Parallel Seminars will be arranged on subjects as for example: ESD and health, the components in teaching the rational use of antibiotics to children of different age groups, normative changes, action research projects, child participation projects, outdoor education and children's health in preschools and schools
· Presentation of the project plans in China and and Sweden and materials from this project

· Application procedure to become a preschool or school participating in the AB-ESD project

The conferences will be arranged in cooperation with universities, county councils, city councils in Malmö/Lund, Linköping, Göteborg, Karlstad, Stockholm, Västerås, Uppsala and Umeå. There will also be a possibility for local authorities to invite representatives from the AB-ESD project group to local conferences in other cities.

Appointing preschools, schools and child health centres

In Sweden, initially there will not be an implementing plan decided by national ministries and authorities. The recruitment of the Swedish participants will be based on their initiative to apply. There will be multiple ways to join the project:

· By invitation through existing networks of OMEP and Green Flag

· Answering to information in journals for professionals

· By appointment decided by local authorities for preschool, school and health centres

· Signing up at conferences

Sino-Swedish meetings for the coordination of the project

For the communication regarding all aspects of the progress of the project, to exchange views and opinions and to build a stable and sound foundation of the project, the Chinese and Swedish sides need to hold meetings.

*The first meeting in the autumn of 2011 is coordinated with the Sino-Swedish working group and will be held on September 15-18*

The timing and arrangements for the meeting should primarily be decided by Chinese and Swedish project managers.

Evaluation and analysis of the results of the project

*Time: November 2012 – June 2013*

To study the development of the project, surveys will be carried out with questionnaires which will be sent out to the network of pilot schools and communities. Material will be collected which can be used for analysis of the result of the activities and the improvement of knowledge and awareness in the target group comparisons will be made with other groups which have not participated in the project.
The evaluation will be carried out in cooperation with Stockholm University, Lund University and Child healthcare services in Stockholm and Skåne County Council.

**The Swedish working group for AB-ESD/Education for ABR**

The group will be constituted of specialists representing the fields of education/ESD, biomedicine, psychology, human ecology and sinology, and will invite participants with complementary competencies on children’s education, normative changes and multidisciplinary research related to ABR.

In June 2011 the partners of the AB-ESD/Education on ABR working group are:
OMEP
Lund University
Stockholm University
Green Flag under Keep Sweden Tidy
ReAct
The Swedish CDC

The Swedish working group for AB-ESD/Education in ABR will be led by Elisabeth Mühlhäuser, Lund University

The budget for the Swedish working group for AB-ESD/Education on ABR will be discussed during June.