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**PROMISE**  
**Promotion of Migrants in Science Education**

Berlin and Graz, July 2005

**SIXTH FRAMEWORK PROGRAMME**

**Science and Society**

**Science Education and Careers 2004**



## Preface

This paper is a summary of relevant sections of the PROMISE (Promotion of Migrants in Science Education) project description authored in 2005 that outline the characteristic ideas, concepts and work contents of PROMISE, as defined by this preface.

The very principal idea for this project is that access to science education has to be equal for all students, independent from their social, cultural and linguistic origin. As there is a human right for education and as science is an inherent part of education in our society, a *human right for science education* can be derived thereof. How to prove if the right is realised or not? Empirical studies provide data which show the differences in science performances of migrants and non-migrants, girls and boys and people of different socio-economic backgrounds. As long as the percentage of migrants and women in various fields and job positions of science is not the same as in the total population, we can consider them as “underrepresented” and have to assume a situation of persistent inequality with social barriers in the access to positions adequate to the qualifications gained.

We consider PROMISE as a contribution to the realisation of equality in science education. We have chosen a solution-oriented approach instead of a deficit- and problem-oriented one. PROMISE should not be a project which once more proves the underperformance of migrants. These data already exist. It is high time to set actions. We feel strongly responsible to produce outcomes which are sustainable and of direct benefit for migrants. The working plan reflects these ideas.

From the beginning on it was clear to us that the project should be a cooperation of countries of origin and countries of residence. It is inevitable for the consideration of cultural diversity that experts from different cultures are equally involved. By the same token we considered it necessary to integrate different disciplines like science education, language education, social sciences and human rights. One might be an expert in physics education, but in order to discover all the difficulties of language that migrants meet in physics lessons, the cooperation with an expert of language education will be very helpful.

Our project design was successfully accepted by the European Commission. The funding by the EC and the Deutsche Gesamtmetall enabled the employment of scientists and several students at the partner universities, especially at the Humboldt-University of Berlin and the University of Vienna.

The project outcomes and project materials are going to be published together with contributions of well known scientists in the book “*Science Education Unlimited*”, (eds. Tanja Tajmel and Klaus Starl), Waxmann, Münster, New York München Berlin (expected in 2008).

Tanja Tajmel and Klaus Starl

### **Characteristics of PROMISE**

- *The focus on the **human right for science education***
- *The **solution-oriented** approach*
- *The co-operation of **countries of origin and countries of residence** in issues of science education, the first one of this kind in Europe*
- *The **interdisciplinary work** of natural sciences, humanities, human rights and social sciences, which as well is the first one of this kind to address this issue*
- *The co-operation and regular meetings of teachers and scientists as **PROMISE-teams***
- *The **mentoring of migrant female students** from secondary schools by university students in **Club Lise***
- ***Working plans** for efficient and **sustainable outcomes** which consider the national different competencies and interests and distribute **different tasks** among the national PROMISE-teams*
- *The unification of the work of the national PROMISE teams like puzzle pieces to a **consistent PROMISE end product***

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## 1. Project summary

The objective of the project is: PROMOTING MIGRANTS IN SCIENCE EDUCATION and in choosing science careers. The migrants addressed are children of immigrants for economical and political reasons. There will be a focus on intense cooperation between countries of origin and countries of residence, in order to harmonise the different methods and standards in science education. These differences in science education in addition to linguistic and cultural communication problems are considered to hamper a successful integration of migrants. The goal will be achieved by a threefold package of activities: 1) DIRECT PROMOTION of migrant girls at universities by establishing CLUBS LISE, a girls working group on topics of science, to promote the choice of science studies for migrant girls as an underrepresented group in science. Acknowledging the gender dimension in science as a male-dominated field the girls will work together with female scientists and science students with migration background. These will function as role-models for their own science careers. 2) To affect a MEDIUM-TERM PROMOTION of migrants in science education PROMISE-teams consisting of teachers and education scientists will cooperate with experts of migration, language and intercultural research in order to collect and develop new methods and best practices in science education considering the linguistic and cultural diversity of classes. 3) To establish a LONG-TERM PROMOTION of migrants, specific teacher trainings will be institutionalised. For the purpose of harmonisation of methods of science education a dialogue between countries of origin and residence, between universities and schools, will be established.

### Project logo



## 2. Project objective(s) and state of the art

### Overall objective (goal):

Promoting migrants in science education and in choosing science careers by developing new concepts and **best practices in science education** under consideration of the **linguistic and cultural diversity** of classes in **cooperation between countries of origin and countries of residence**. The objective will be pursued by a threefold package of component objectives:

### Component objectives:

- 1) To promote very talented migrant girls (**Club Lise**) – *direct promotion*
- 2) To establish teachers working teams (**PROMISE-teachers teams**) – *indirect promotion*
- 3) To institutionalise and disseminate the **best practices** – *sustainability*

#### 1) To promote very talented migrant girls (Club Lise) – direct promotion

The purpose is to initiate an **immediate action plan**, as EUMC 2004, S. 127 recommends, to increase the number of migrant girls choosing science careers, as these girls are the **most underrepresented group** in science. The Club Lise is named after the physicist Lise Meitner. The term *Lise* means in Turkish *Lycée* (secondary school for higher education).

- To support very talented migrant girls (age 16-19), who are interested in science and who will select their careers and studies within the next 2 years, by establishing **intercultural girls working groups** called **Club Lise** in countries, in which there is a PROMISE-project partner. To provide insight into the structure of science departments, lectures, laboratory experimental work, etc. by giving the girls the status of “**junior students**”.
- To promote **interdisciplinarity** in scientific work in order to give the girls a broad overview of science studies. The topics of the workshops are scientific (physics, chemistry, biology, and informatics).
- To consider and support the girls’ linguistic and cultural diversity as the female **students and scientists** who are working with the girls, represent a linguistic and cultural diversity as well. Thus the girls get support both in scientific and intercultural work, to prepare the girls to work in intercultural and linguistic diverse teams as they are common in scientific research teams.
- To give an opportunity in building up **international scientific networks** there will be meetings of all Clubs Lise, called “*Club Lise International*”. The girls get the possibility to meet other girls who are equally interested in science. *Club Lise International* is supposed to be a foundation for international networks of science students with a background of migration. Eventual reluctancy of parents will be overcome by their involvement from the beginning.

#### 2) To establish teachers working teams (PROMISE-teachers teams) – indirect promotion

The purpose is establishing support and promotion in science education by sensitize teachers in intercultural communication and developing new education concepts for the next generations of young people with migrant background.

- To address at least 4 schools in order to find 4-10 interested science teachers in each project’s partners’ country, that are up to 40 teachers in the project, for

cooperation in PROMISE-teams. The minimum number for PROMISE-team teachers is 4 out of 4 different schools per country.

- To establish a national PROMISE-Team, which consists of **4-10 teachers and researchers of science education**.
- To do **research on specific barriers** such as different science education methods in countries of origin and countries of residence as well as linguistic and cultural barriers in science education. To scrutinize the consideration of **gender mainstreaming criteria** in science classes. Gender mainstreaming is essential for every successful intercultural cooperation of men and women, especially in science, where women are an underrepresented group.
- To collect and document teachers **experiences and best practices** for teaching in classes of cultural and linguistic diversity.
- To **raise the interest of migrants in science** by developing and proving best practices for science education on the basis of the research and the experiences
- To organise annual meetings of all PROMISE-teams on topics of **harmonisation of intercultural science education**, harmonisation of gender mainstreaming in science classes and harmonisation of **education standards** in science.
- To establish a basis for a long term successful and intense cooperation of **universities and schools** especially between **countries of origin and countries of residence**.

### 3) To institutionalise and disseminate the best practices – sustainability

- To **institutionalise** the cooperation of universities, schools and experts of migration by teacher trainings for science teaching in classes of cultural and linguistic diversity.
- To establish a **dialogue between countries of origin and countries of residence**, universities and schools, in questions of science education for an international **harmonisation of science education methods and education standards**.

To elaborate **suggestions** and recommendations of successful intercultural education **for education authorities**.

### Methods

The project's structure, objectives and tasks are methodologically developed after the logical framework approach.

Starting point is a "Problem tree", identifying the concrete needs of action. Next step is a stakeholder analysis, where pupils, teachers, headmasters, experts in social science and migration, university institutes and politicians were identified for the activities. Out of that an objective tree can be drawn. Finally all levels of activities, objectives and impacts can be evaluated to a certain extent<sup>1</sup>.

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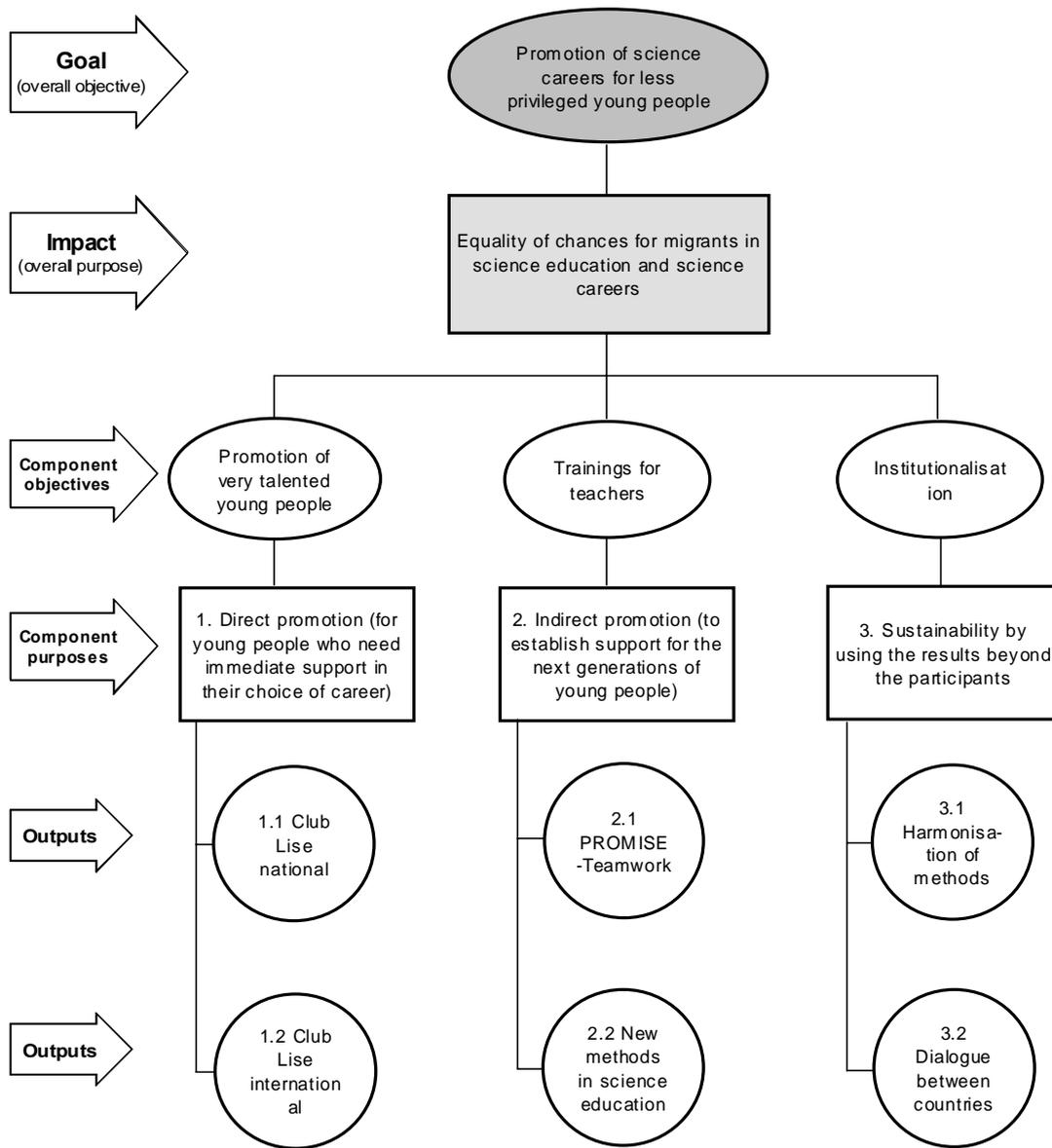
<sup>1</sup> Compare EUMC, 2004, Migrants, Minorities and Education, p. VI: "...practical significance [of projects] is often not evaluated"

**Logical Framework Diagram**<sup>2</sup>

**PROMISE**

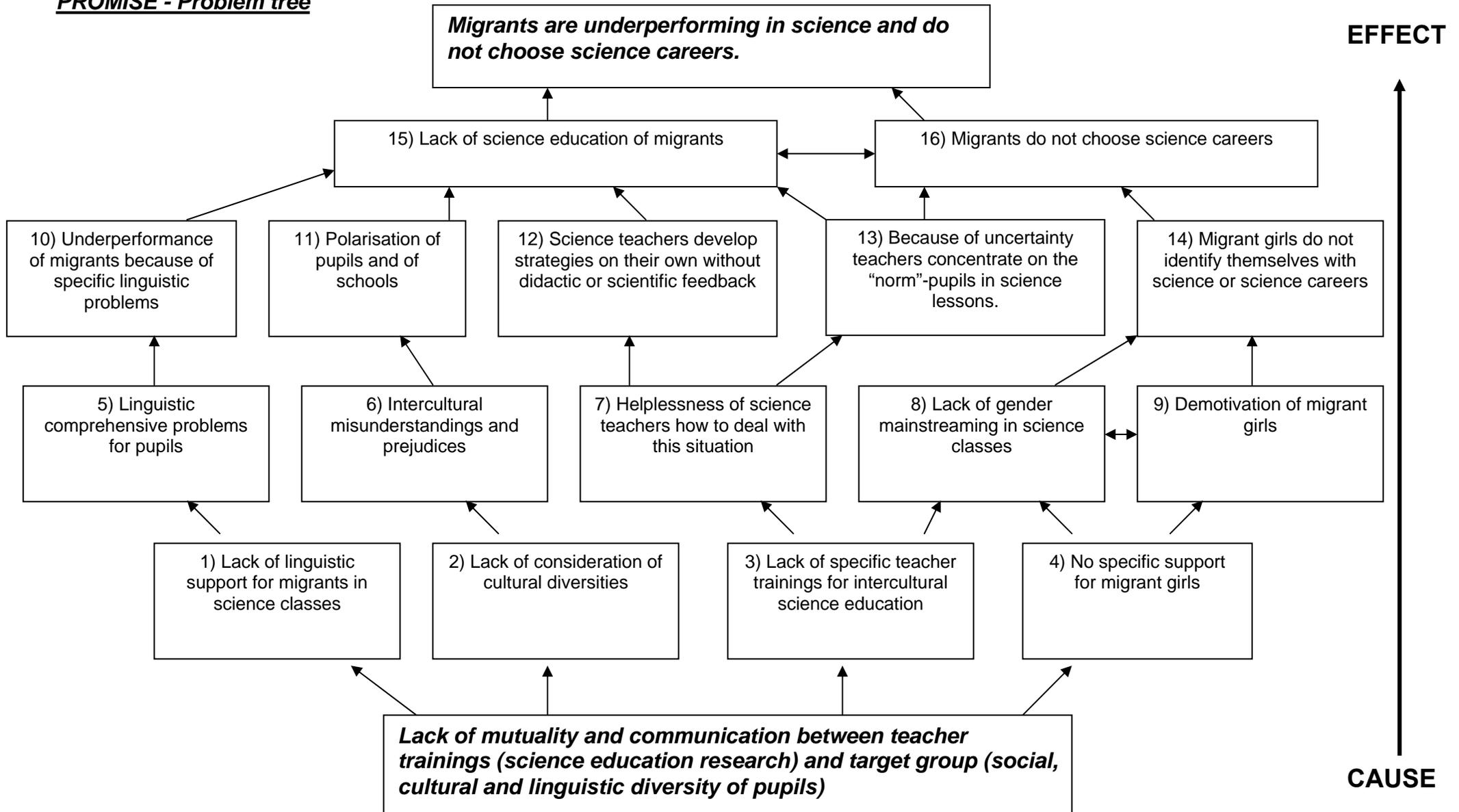
Promotion for Migrants in Science Education

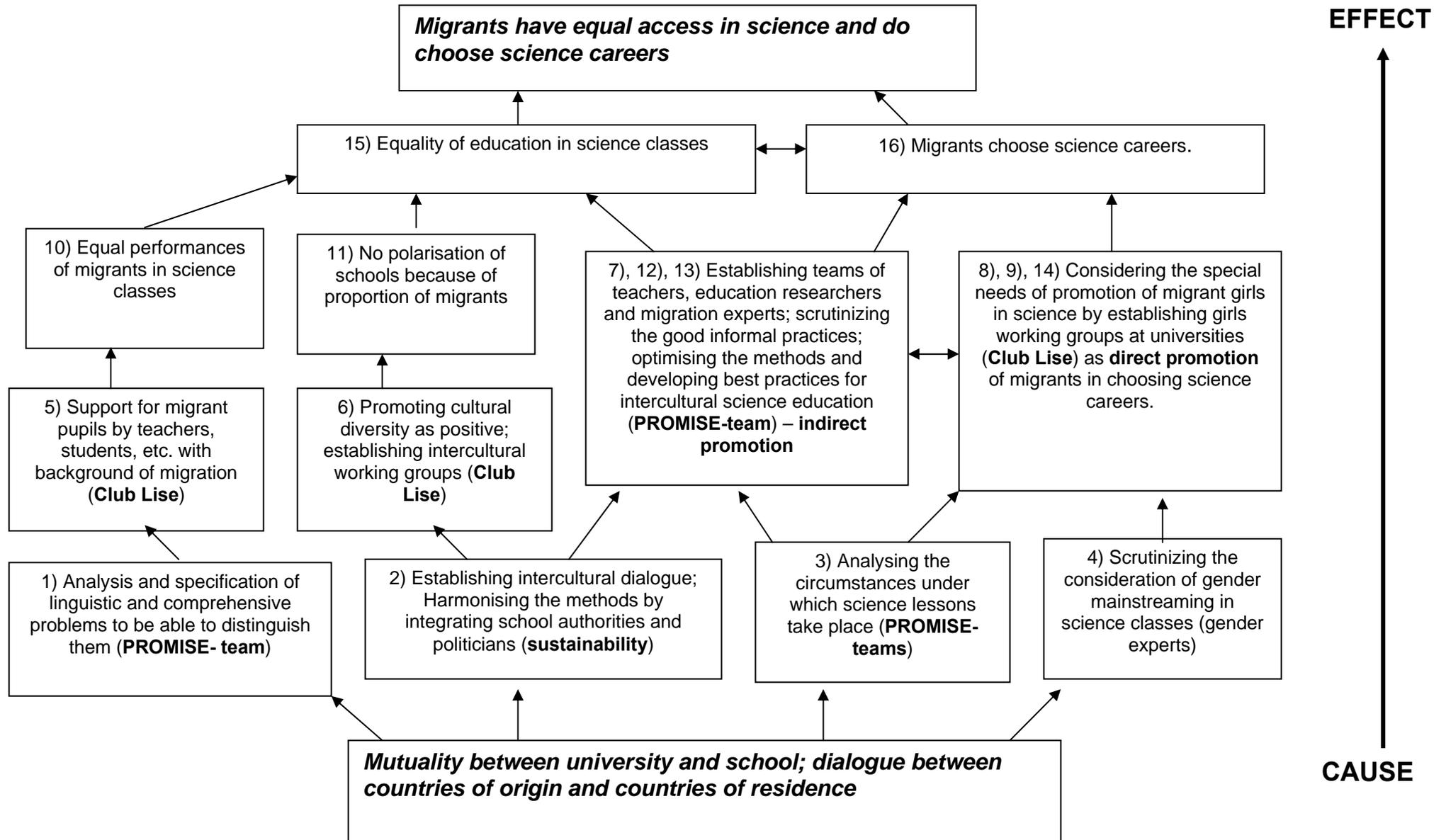
Best practice to promote science careers for less privileged young people.



<sup>2</sup> Model :AusGUIDELines, The Logical Framework Approach, Australian Agency for International Development, The Australian Government's Overseas Aid Program, June 2003

***PROMISE - Problem tree***



**PROMISE – Objective tree**

### 3. Participants list

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#### List of Participants

Partic. Role*	Partic. No.	Participant name	Participant short name	Country	Date enter project**	Date exit project**
CO	1	<i>European Training and Research Centre for Human Rights and Democracy</i>	ETC Graz	Austria	Month 1	Month 24
CR	2	<i>Humboldt-Universität zu Berlin, Institut für Physik, Didaktik der Physik</i>	UBER	Germany	Month 1	Month 24
CR	3	<i>Universität Wien, Institut für theoretische Physik</i>	Uni Wien	Austria	Month 1	Month 24
CR	4	<i>University of Sarajevo, Faculty of Science</i>	PHYDEFAS	Bosnia and Herzegovina	Month 1	Month 24
CR	5	<i>Yildiz Technical University, Science Education, Faculty of Education</i>	YTÜ	Turkey	Month 1	Month 24
CR	6	<i>Gesamtverband der Arbeitgeberverbände der Metall- und Elektro-Industrie e.V.</i>	Gesamtmetall	Germany	Month 1	Month 24

\*CO = Coordinator

CR = Contractor

## 4. Relevance to the objectives of the specific programme and/or thematic priority

The project aims to making people, particularly young people familiar with science. The specific activities will give science a more prominent place at school in the perception of pupils. People will be addressed by promotion, emphasis on intercultural teaching and by major regular events. In particular members of underperforming groups will be promoted<sup>3</sup>.

Science and Society objectives will also be supported by the cooperation between universities and the industry. The initiative *THINK ING* of the employer's association of the German Metal Industry could be interested and involved successfully and was won as a financing partner in the consortium.

The Eurobarometer Study<sup>4</sup> shows that about 45 % of the Europeans would be interested in science issues, but only 29 % feel themselves sufficiently informed. Another 45 % are not interested in science. PROMISE tries at the one hand to get more people interested and on the other hand tries to inform better those who are interested but uninformed.

To reach the "Lisbon goals" of the EC it will be necessary to employ all available resources to proceed in science research. Therefore the European society cannot afford underperforming groups if underperformance is caused mainly by social exclusion or inadequate educational methods, as EUMC states in its recent report<sup>5</sup>.

However politicians will decide about adherence of the Balcans and Turkey, a cooperation between these countries and EC will be deepened. Thus the EC has to prevent the development of "second class subcultures" in the present EC-countries and to promote and standardise the scientific resources in these countries as a contribution to the European scientific potential.

### Objective of Call:

*4.3.4.3 Promoting young people's interest in science, science education and scientific careers*

*ii) Actions aimed at increasing the number of young people from "disadvantaged or underperforming" groups<sup>6</sup> entering careers in science.*

### Contribution of PROMISE:

**PROMISE** suggests **direct and long term-solutions to support migrants in their scientific talents** as EUMC stated significant underachievement of this group of

<sup>3</sup> see also Science and Society Action Plan, EC, 2002.

<sup>4</sup> EC, Eurobarometer Studies 2001, Europeans, Science and Technology, p. 11.

<sup>5</sup> EUMC, 2004, Migrants, Minorities and Education, chapter 5.2. Reasons for academic underachievement of Migrants and Ethnic Minorities, p.53-55

<sup>6</sup> "Disadvantaged or underperforming groups" include where appropriate, young people from ethnic minorities, or children of immigrants, as well young people who by virtue of the lack of appropriate local infrastructures do not have access to necessary resources to allow them reach their full potential as regards possible future careers in science. (FP6-2004-Science-and-Society-11)

pupils<sup>7</sup>. The project is focused on promoting migrants as they are an underrepresented group at universities and in science studies due to their disadvantages in common education methods. The migrants addressed are children of immigrants because of economic and political reasons following the recommendations of EUMC<sup>8</sup>. In Germany the project will concentrate on **migrants of Turkish origin** as they represent the largest group of migrants. In Austria there will be a focus on **migrants from Bosnia and Herzegovina and from Turkey**<sup>9</sup>.

- To understand the linguistic, cultural and methodological diversities in science education a **dialogue between countries of origin and countries of residence** will be established.
- To increase the number of migrant students who choose science careers it is essential to start **promoting migrants already at school** (long-term solution) by developing new methods of science education in classes of cultural and linguistic diversity.
- To promote migrant girls as the most underrepresented group in science there will be special **promotion at universities** for talented migrant girls by establishing Clubs Lise.

#### Objective of Call:

*The focus is on science education as well as on lowering barriers (either perceived or real) that prevent such young people from orienting themselves towards science careers, ...*

#### Contribution of PROMISE:

PROMISE is going to lower three kinds of barriers<sup>10</sup>:

- Science as a male-dominated field as a barrier for migrant girls to choose science careers.
- The general disadvantages migrants suffer in common education systems because of the lack of consideration of their linguistic and cultural background.
- Different methods of science education in countries of origin and countries of residence.

#### **1) Club Lise:**

Especially female migrants **are extremely underrepresented in science careers**. Science is a male-dominated field; there is a lack of female scientists as role-models for girls. **To increase the number of female migrants who choose science careers, Club Lise will be established**. The Club is an intercultural girls group working on topics of science (physics, chemistry, biology, and informatics). The girls (age 16-19) get the status of **junior students** and will get a broad overview of science careers as they get into personal contact with students, researchers and professors. They will be supported by university students and scientists, who themselves represent linguistic and cultural diversity. Thus the girls get to know "real" scientists as role models for identification. They get an insight into the structure and organisation of science departments; they get the

<sup>7</sup> EUMC, 2004, Migrants, Minorities and Education, chapter 5.

<sup>8</sup> Ibid. Recommendations to the EU and its member states, p.127.

<sup>9</sup> for data material see EUMC, 2004, p.14.

<sup>10</sup> ECRI recommends: "... where members of particular groups underperform in the educational system, research assessing their situation [...] should be carried out." 2<sup>nd</sup> Report on Iceland, paragraph 31 and summarized in the general recommendations of the ECRI's 2<sup>nd</sup> round of reports.

possibility to personal communication with professors, long before they start their own studies.

In *Club Lise International* (the annual meeting of all Clubs Lise) the girls get the possibility to build up networks with girls from other countries who themselves are interested in science<sup>11</sup>. This promotes the **competences of the girls** in building up international **science networks** and working groups, both competences which are required of science researchers. This action lowers the barriers for migrant girls to enter university and to choose science studies.

## 2) PROMISE-Team:

The PROMISE-Team, 4 national teams consisting of 4-10 science teachers, 1-2 education researchers, develop **new methods of science education on the national level**, in which the **cultural and linguistic diversity is taken under consideration**<sup>12</sup>. Experiences and best practices of teachers in classes of linguistic and cultural diversity will be collected and documented. There will be a focus and research on specific language problems as to be found in science school books and in **communication structures in science** between teachers and pupils, as there is a specific language in science which is not considered in common language lessons. There will be **teacher trainings** to prepare the teachers in teaching classes of linguistic and cultural diversity<sup>13</sup>. There will be a **cooperation of migration experts, teachers and education scientists** (PROMISE-conferences and symposia) to develop and prove best practices in intercultural science education. There will be a focus on the interests of migrant girls in science classes by considering gender mainstreaming.

## 3) Cooperation between universities and schools of countries of residence and countries of origin:

The objective is to develop intercultural methods of science education in order to **harmonise the nationally different science education systems** and education standards. The international differences in consideration of gender mainstreaming will be discussed and harmonised as gender mainstreaming is of highest importance especially in the male dominated field of science. There will be meetings of teachers, education researchers and experts of migration and gender mainstreaming of the project partners' countries. In cooperation **proposals for the national education authorities** will be elaborated<sup>14</sup>. The national science teachers trainings will be discussed and concepts of **harmonisation of teacher trainings** will be developed.

<sup>11</sup> Ibid.: „Developing cross-cultural contacts: to continue and expand exchanges between pupils of different schools in order to foster contacts and friendships amongst children from all groups in society.” (see also: M. Kelly (2004); 10 years of combatting Racism).

<sup>12</sup> ECRI, 2<sup>nd</sup> Report on Austria, paragraph 23: “Efforts should be made to recruit or increase recruitment of members of minority groups into the teaching profession.” ECRI, 3<sup>rd</sup> report on Germany (2003) in paragraph 28, recommends, that educational materials reflect the diversity of the German society and further more that there will be taken measures to ensure the intercultural competence of teachers.

<sup>13</sup> ECRI, 2<sup>nd</sup> Report on Austria, paragraph 15: “ ..., ECRI noted that intercultural education takes the form of a recommendation to teachers to take relevant issues into account across all subjects. ECRI urged the authorities to ensure that all teachers received training in this regard and to monitor the application of this principle in the education delivered in practice.”

<sup>14</sup> See Council of Europe, General Policy Recommendation 1: “Enhance the appreciation of cultural diversity” and “facilitate the integration of non-citizen children ... into the school system”

Objective of Call:

*... and on the dissemination of experience and best practice across Europe.*

Contribution of PROMISE:

The experiences and best practices will be disseminated by:

- Meetings of the PROMISE-teachers-teams: Best practices in teaching science classes of cultural and linguistic diversity of the national PROMISE-teams will be collected and documented at the **international PROMISE-team-meetings**. New best practices will be developed by the teams supported by experts of migration and science education. The results of these meetings will be **documented and published**.
- Conferences at universities on this topic will be organised. The **conferences** will be **open for the public**. The project partners' universities will elaborate **proposals to school authorities** how to change science education in order to ameliorate the chances of migrants.
- The best practices will be institutionalised as a permanent part in **science teachers trainings** as teachers are the most important **multipliers** in science education.
- There will be a link to the **PROMISE-website** on education web servers of the partners' countries.

## 5. Potential Impact

### 5.1 Contributions to standards

#### The situation:

It is a fact that in European cities there are public schools where the proportion of migrants is more than 90% as a consequence of residential segregation<sup>15</sup>. In addition to linguistic and cultural problems the children of migrants who already entered school in their countries of origin are used to **different methods of science education and standards**. As special teacher trainings for classes of linguistic and cultural diversity are not compulsory and **special science education methods have not yet been developed** (to our knowledge), teachers in the countries of residence do not know how to handle this new situation. On the other hand migrants children do not feel addressed as their cultural and linguistic diversity is not considered, neither in the lessons, nor in schoolbooks<sup>16</sup>. Thus migrants are disadvantaged in school. Common methods of science education do not consider that society changes in its cultural and linguistic diversity. There is a lack of sensibility on this topic. Commonly aspects of migration are not considered as topics of science education. Language problems and intercultural misunderstandings as well as the helplessness of science teachers in dealing with this new situation have the effect, that migrant pupils do not feel addressed adequately. They get more and more disinterested. The effect is that these **pupils loose interest** in school generally and in science in particular. Thus performances of migrants in science and other subjects decrease, migrants become an underperforming group in science as the EUMC report stresses. PISA 2003 finds strong differences in performance in science between migrants and German pupils in Germany<sup>17</sup>. Pupils without migration background count in mathematics for example 8 points in Austria and 24 points in Germany above the average, pupils with migration background 54 points below in Austria and 49 points below the average in Germany, this is a distance of 74 points in Germany and 62 in Austria!<sup>18</sup> Schools with high proportion of migrant pupils have a reputation of being of low quality. The drastic effects on social structure are polarisation of schools and prevention of integration<sup>19</sup>. Migrants are underrepresented in science careers as most of them do not have the necessary certificates and graduations to enter university. In order to understand the linguistic and cultural diversities in learning science a dialogue between countries of origin and countries of residence has to be established<sup>20</sup>.

#### Impact of PROMISE in the area concerned

The activities of PROMISE are intended as promotion of migrants on three different levels: short-term, medium-term and long-term promotion. Adequate to these levels a threefold package of impacts is expected.

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<sup>15</sup> see EUMC, 2004, Migrants, Minorities and Education, p. VI.

<sup>16</sup> The Council of Europe encourages member states to keep content of teaching materials under a permanent review concerning the ethic balance in schools, see M. Kelly (2004), 10 Years combatting Racism, p. 46.

<sup>17</sup> OECD, 2004, PISA 2003, [www.pisa.oecd.org](http://www.pisa.oecd.org), p.26.

<sup>18</sup> *ibid.* p. 25.

<sup>19</sup> The European Commission against Racism and Intolerance (ECRI, Council of Europe) stated in its 2<sup>nd</sup> report on Germany a drop out rate high above the average rate, 2<sup>nd</sup> Country Report on Germany, paragraph 25, [www.coe.int/ecri](http://www.coe.int/ecri).

<sup>20</sup> *Ibid.* The recommendation in paragraph 53: „[...] incorporate the intercultural dimension in other subjects [than history] at all levels of education [...]”

### 1) Direct promotion of migrant girls at universities by establishing Clubs Lise.

This is a direct measure to promote the choice of science studies for migrant girls as they are the most underrepresented group in science. The girls (age 16-19) get an insight into the structure of science departments and scientific laboratory work; they get to know female scientists and science students with background of migration as role models for their own science careers. Barriers for migrants will be lowered by giving them linguistic support and support in intercultural work. Barriers especially for migrant girls will be lowered by considering the gender dimension in science as a male-dominated field. Thus the working groups are monoeducational groups according to results in gender-research on mono- and coeducation in science<sup>21</sup>.

#### Impact on individuals:

- Migrant girls **feel addressed** by university as they get to know students and scientists with similar migrational biographies. The **linguistic and cultural barriers will be lowered** by linguistic support of the students who have background of migration themselves. The girls will get more self-confidence.
- The barriers, either real or perceived, to enter university and to choose science careers will be lowered by giving the girls the possibility to get orientation in university's life as "**junior students**" long before they start their studies. Thus at the time when they start their studies they feel already **familiar with the structure of science departments**, communication with scientists and professors, and students' information points.
- It is expected, that **talented migrant girls with multiple interests** who took part in Club Lise and are going to enter university within the next two years, **will prefer to choose science studies** instead of e.g. studies of law or economics, as they are already familiar with science departments and have already build up mentoring-like friendships with science students. Their knowledge about science studies and careers is higher than the knowledge of most of the male students who are going to start their studies at the same time. This advantage **will increase the self-consciousness of migrant girls in science and the number of female science students**.
- The girls' identification with science careers will increase as they get to know "real" female scientists, i.e. **role models for their own careers**. The regular staff of Club Lise will consist of female students and female scientists.

### 2) PROMISE-teams

To affect a **medium-term promotion** of migrants in science education, **PROMISE-teams** consisting of teachers and education scientists will cooperate with experts of migration, language and intercultural research in order to collect and develop **new methods and best practices in science education considering the linguistic and cultural diversity** of classes. There will be a **mutuality between Club Lise and the PROMISE-teams**: The experiences in intercultural teamwork of Club Lise will be considered in the new education methods, on the other hand new methods will be pre-tested and proven in Club Lise. The action will be focused on specific language problems as the scientific communication in science lessons is different from every day communication structures, not only because of different vocabularies but also because of different grammatical structures, with which migrants are in general not familiar. Thus the action is not to be seen as a language course, the more it should **sensitize teachers in how to communicate in science lessons** with respect to

<sup>21</sup> Kessels, Ursula (2002): Undoing Gender in der Schule. Weinheim, München: Juventa Verlag

different linguistic backgrounds. As there are communication problems between migrants and teachers, the teachers do not know the reasons of the bad performance of migrants, whether there are language-problems or problems in comprehension of science. The consequence is that there is no specific support for migrants as teachers do not know what kind of support is needed. At least a **successful linguistic and intercultural communication between teachers and pupils is indispensable for studying science.**

#### Impact on quality and on structure:

- The consideration of the cultural and linguistic background of migrants and special teachers training programs will affect **successful communication between teachers and children** of migrants as the pupils will feel more addressed.
- Within the project **16 to 40 teachers** will work in the PROMISE-team. Approximately **1000 teachers** within the projects partner countries will be addressed and will get information about PROMISE.
- In the second year of the project **university courses** on base of the experiences of the first year will be established in Berlin and in Vienna. In this courses 5-10 education students, who will become science teachers within the next years, will be informed about the projects outputs of the first year and will be involved in the ongoing PROMISE-teamwork.
- The **performance of migrant pupils will get better** and schools with a high proportion of migrants will loose their bad reputation as schools of low quality.
- Better performances will be followed by better certificates and diplomas which **qualify migrants to choose science careers.**
- This action is the way to a **depolarisation of schools and a better integration of young people** with a background of migration.
- This action affects the raise of the number of migrants choosing science careers as well as a better integration of migrants as a **general impact on society.** The latter impact can be extended by similar projects in other subjects.

### **3) Institutionalisation and harmonisation**

To establish a **long-term promotion** of migrants in science education and taking in account the process of adherence of Turkey and the Balcans, the **methods of science education and standards in Europe have to be harmonised** and the promotion actions like **teacher trainings have to be institutionalised.** The PROMISE-teams will elaborate together with education departments and experts of migration, language and gender mainstreaming suggestions and recommendations for school authorities in order to optimise the promotion activities especially for migrants and for successful intercultural teamwork<sup>22</sup>.

- Impact of better teachers qualification:

An institutionalisation of teacher trainings for science education in classes of linguistic and cultural diversity as an **inherent part of national teacher trainings** will have an impact on the next generations of children of migrants. The impact is enormous as the teacher trainings are going to be institutionalized. Impact of harmonisation:

As children of migrants will not have to get used to unfamiliar education methods in their new country of residence the harmonisation of science education is

<sup>22</sup> See also FN 4 and 8; European Council, Conclusions (Lissabon process), Oct. 2003, paragraphs 11,19,30.

**beneficial for keeping migrants' interest in science and for the process of social integration at school.**

## **5.2 Contribution to policy developments**

- The involvement of **all levels of hierarchy** will ensure success and sustainability. Pupils will get interested and directly promoted. Teachers will be involved to ensure promotion for future generations of pupils and to be helped to perform more effective teaching by applying gender- and cultural mainstreaming methods. Thus specific teacher trainings will become an inherent part of general teacher trainings.
- The teachers and the pupils will need support of the next level as well, the headmasters. Therefore headmasters will be informed and involved in the project and the **ongoing process beyond the project**.
- Strategically a sustainable process of further development can only be guaranteed by **involving local, regional, national politicians** and maybe politicians on the European level to initiate changes leading to a higher equality of chances and a larger quantity of young people choosing a scientific career. Therefore experts in the field of migration, integration and education policy will work together with the PROMISE-teams on the one hand. On the other hand conferences will be organised where members of all levels mentioned above will be brought together to exchange the results of their work and to exchange their opinions and expectations for the future.
- A very important component is the exchange of experiences and knowledge of **host countries and countries of origin for a mutual understanding**, to draw policies of mutual acceptance and thus contribute to a capability-raising policy<sup>23</sup>.

### Added value in carrying out the work on the European level

The international PROMISE-team meetings give chances for international exchange and discussion of the national research results on methods of science teaching and consideration of gender mainstreaming. At these meetings harmonised methods of science teaching will be developed and disseminated by the PROMISE-teachers in their countries as well as by teacher trainings. Following these methods e.g. standardised physics lessons will be given in Turkey, Germany, Austria, Bosnia and Herzegovina. Other countries will hopefully follow.

Harmonisation of the European science education systems for the benefit of migrants – and the benefit of the EU finally – is a long-term process. As a first step there will be established a basis for communication between the school authorities of the countries of origin and countries of residence within the project. To discuss the harmonisation of science education systems annual conferences and symposia under participation of national school authorities, politicians and PROMISE-education-experts will be organised.

The European harmonisation of different methods and standards in science teaching and in didactics of science will affect all pupils of the project partners' countries in the end. The idea is to harmonise the international differences in teaching structures in

<sup>23</sup> On the capability approach see M.C. Nussbaum, 2000, Women and Human Development, Chapters II.6, III.8 and IV.7; A. Sen, Development as Freedom, 1999, Chapter 8; UN Commission of Human Security, 2003, Human Security Now, Chapters 3 and 7.

order to optimise the integration of migrants in school and social life, as better integration leads to better performance and increases the probability that migrants choose science careers.

In the long-run all stakeholders are expected to be equal EU-citizens. The project contributes to equal chances and a higher performance of the European research area, which might be enlarged in future. The activities are adequate to promote young people in four countries, but they are also adequate to learn from each other, to harmonise education under consideration of cultural aspects and thus promote migrants living in Austria or Germany as well as people returning to their country of origin. Underperformance of migrants in Austria and Germany is also caused by the lack of integration and education policy concerning foreign workers from Turkey and former Yugoslavia<sup>24</sup>. The project is aimed to fill that gap as good as possible. A national effort would have an positive impact on integration in one country, but would not reach the given goals.

### **5.3 Risk assessment and related communication strategy**

In general one can say there are no risks of the project implementation itself or its outputs and results neither for society nor for persons or institutions associated with the project.

### **5.4 Explanation of the specific role of home country experts (following the remarks of the evaluators)**

“Home country experts” are supposed to be:

***Science teachers, education researchers, experts on gender mainstreaming, experts in intercultural science teaching, ... from Turkey and Bosnia Herzegovina***

The involvement of these experts within the project is necessary because of several reasons, which are of highest relevance for the project:

#### **1) National differences of interest of girls and women in science**

The numbers of female science students is much higher in Turkey and Bosnia-Herzegovina than in Germany and Austria. But, obviously this interest decreases in their new countries of residence like Germany and Austria. Even the number of German and Austrian girls choosing science careers is lower than the number of girls in Turkey or BiH. The reasons for this effect have to be investigated.

PROMISE-Teachers from the different countries shall exchange their experiences and best practices in motivating girls in choosing science careers in order to learn from each other and to optimise in general the promotion of girls (either migrants or non-migrants) in science education.

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<sup>24</sup> IOM, 2004, The impact of migration on Austria, p. 60.

## **2) Migrants changing their countries of residence (e.g. going back to or coming from their home country)**

Due to diverse methods in science teaching and even differences in the content of the national science education curricula it is supposed, that those children who change their country of residence have specific problems in learning science. Further more it is supposed that a harmonisation of the different science education systems will lower barriers, which hamper the changing into a different education system. As harmonisation of science education we understand: respecting the cultural diversities, finding the common, learning from each other the good practices in science teaching, detecting elements which are contraproductive to a successful intercultural education and contraproductive to motivate girls, and creating together methods for successful intercultural science lessons.

### **The role of the experts will be:**

Joining the PROMISE-meetings in order to discuss the differences and to develop intercultural science lessons.

Joining the PROMISE-conferences in order to exchange the experiences and best practices on international level.

## **5.5 Clarification on the potential for adaption to other socio-cultural environments**

Initially it has to be clarified, in which way different socio-cultural environments can be distinguished:

Following the EUMC-report on Migrants, minorities and legislation<sup>25</sup> the EU member States can broadly be divided into three different groups according to their immigration history and their concepts on migrants and minority population:

1. Countries with a history of significant immigration from former colonial countries (France, the Netherlands, the United Kingdom).
2. Countries which systematically practised the recruitment of migrant workers (Austria, Germany, Belgium, Denmark, Luxemburg, Sweden).
3. The so called "new-immigration-countries" (immigration since the late 1980s: Greece, Italy, Spain, Portugal; since early 1990s: Finland, Ireland).

Depending on the different histories of immigration two major models of European anti-discrimination policies can be distinguished:

- Countries belonging to the first group are often presented as being *multi-ethnic/multi-cultural societies*. Over time these countries have adopted systematic concepts of anti-discrimination policies understood primarily as racial equality issues.
- Most countries belonging to the second group use a "*foreigner concept*" rather than a "minority concept". Hence these countries have often not systematically developed a specific equality or anti-discrimination legislation over the past

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<sup>25</sup> European Monitoring Centre on Racism and Xenophobia (EUMC); Migrants, minorities and legislation: Documenting legal measures and remedies against discrimination in 15 Member States of the European Union; Report submitted by the International Centre for Migration Policy Development (ICMPD), on behalf of the EUMC; December 2004

decades and some of them like Austria and Germany relied on rather general legal instruments.

**Adaptability:**

Our project PROMISE concentrates on two countries, which systematically practised the recruitment of migrant workers and are now following the “foreigner concept” in anti-discrimination policy: Austria and Germany (group 2). We suppose similar problems in science education of migrants in other countries with a similar history of immigration, like Belgium, Denmark, Luxemburg and (limited) Sweden. Therefore we suppose, that the concepts and methods of promotion of migrants in science education, which are going to be developed within PROMISE, could be adapted to these countries as well as to countries belonging to Group 3.

As the migrants addressed in the project are mainly expected to confess to the Islam religion, the methods developed within PROMISE will be adaptable mainly in similar fields of intercultural cooperation of Christians and Muslims.

**Limits of adaptability:**

The limits of adaptability are given by different historical, political and economic developments which determined the flows of migrants to and from the territory. These differences have formed distinctive processes of immigration and integration. Therefore PROMISE is probably not adaptable to societies with completely different histories of immigration, like countries belonging to group 1.

## 6. Project management and exploitation/dissemination plans

### 6.1 Project management

#### Organisation

The overall project management will be carried out by the **ETC Graz**. Project coordinator in charge will be **Dr. Klaus Starl** because of his experience in project management and his long-term experience as a self-employed management consultant. He is coordinating the consortium and communicating with the EC.

The consortium includes all participating institutions. Each institution will delegate one person to the **steering committee**. The project will be internally coordinated by the coordinator in charge (project manager) and the steering committee on the basis of **team cooperation in respect of a consortium agreement** to be endorsed.

The project coordinator will execute the coordinating tasks based on the decisions of the steering committee and supervise the observance of the consortium agreement. Concerning the relation with the EC the most important tasks are the **administration of the EC subsidies** and the distribution of partners' shares. All communication with the EC will be done by the project coordinator. The project administration will meet all requirements of **quality standards and the principles of a reliable accounting**. A professional software tool will be used, the account to administrate the grant will be defined as 'trust account'.

An important task of the coordinating institution due to its professional competence is the monitoring of the ethic and gender issues during the project implementation.

The steering committee is responsible for the duly implementation of the project, particularly concerning the substantial work. The principal responsibility for the content has partner 2, the team from the **Humboldt-Universität**. The responsibility for the national implementation of the activities is with the national partners/coordinators. All partners will delegate one person (the internal project coordinator of each institution) to the steering committee. The committee is designing the detailed work package timetables and elaborating harmonised proceedings and a methodology to produce the claimed outputs and to reach the expected results. The committee will lay down the sequence of the national activities in accordance to the work plan.

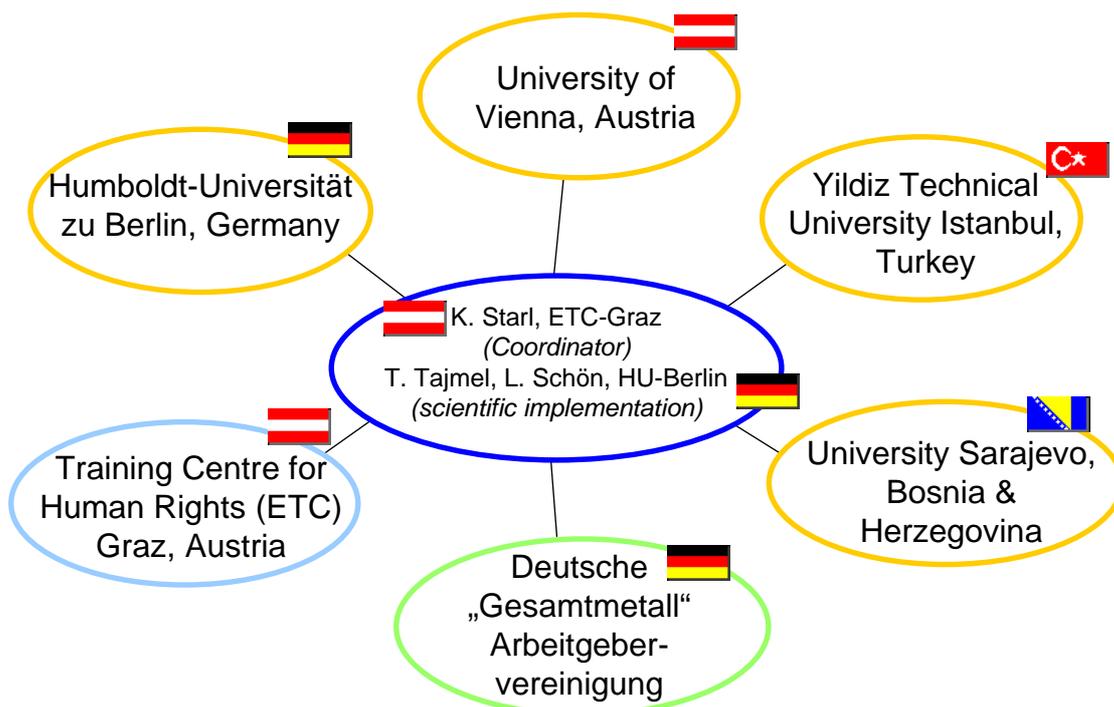
## Structure

As described above the ETC Graz will be the coordinating institution and Dr. Klaus Starl the coordinator in charge (European Level).

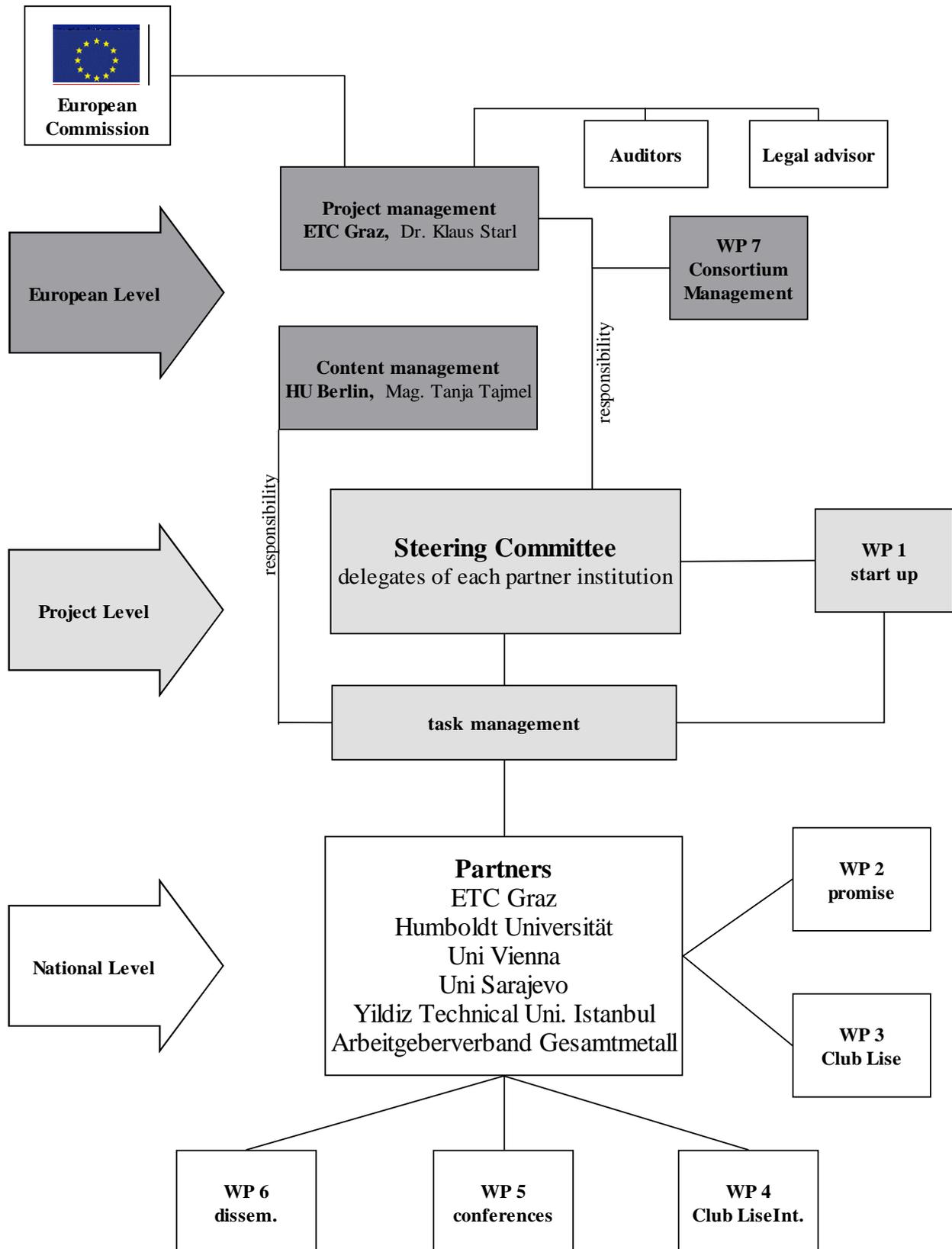
The responsibility concerning the substantial contents lays with the Humboldt-Universität as well as the compilation of the national results of the action (European Level). **Partners 1 and 2 are responsible for the strategic management** of the project.

The internal coordination for carrying out the project is the responsibility of the steering committee (Project Level). In other words, the steering committee will be **responsible for the operational management**. For the steering committee a rotation principle of presidency will be applied. A consortium agreement will be set up even though this is not required by the EC provisions for the call.

Establishing and maintaining of national networks, the work of the PROMISE teams and the Clubs Lise will be coordinated and managed by the project partners (National Level).



### PROMISE Management structure



## **Decision making**

The project coordinator is an equal member of the steering committee and **has one vote**. The decisions of the committee are binding with respect of the EC provisions and the achievement of the required results. Each participating institution will delegate the national coordinator to the steering committee. Each **institution has one vote**.

The principle of any decision process is to achieve **consensual decisions**. The steering committee is allowed to pass decisions if 4 of 6 delegates are voting, presence of the representatives is desired but not necessarily required. Decisions may be made during phone-conferences, by e-mail communication or in a web forum. Votes and decisions should be documented in written form.

In the case a consensual decision is not possible, a quorum of  $\frac{3}{4}$  is required.

## **Science and Society issues**

It is an **inherent part** of the project proposal to engage a human rights institute with monitoring experience at the international as well as the local level. By giving it a leading function in the project's implementation to underline the importance of the Science and Society issues the proposal is made quite unique.

This means that from the concept to the goals and outputs, the composition of the consortium to the process of implementation there will be a rigorous gender, ethical and intercultural mainstreaming.

## **6.2 Plan for using and disseminating knowledge**

### **Knowledge management, intellectual property**

All partners make available previously **existing knowledge** concerning the proposal issues without charging any fees. It will be a contribution free of charge. Existing knowledge is managed by the partners themselves. It may be used for dissemination, research or publications of results by quoting the copyright owners.

Knowledge **produced during** the project is the intellectual property of the project partners. The allocation will be laid down in the consortium agreement respectively decided by the steering committee and may be used freely under the above mentioned conditions. Knowledge and results will be **administrated by the Humboldt-Universität zu Berlin** and shall be used and disseminated by all partners quoting the authors and mentioning that it is a result of the EC-funded project.

For dissemination and publicity purposes of the project there will be a compulsory use of logos and elements of corporate identity. Additionally the remark of the EC-funding is obligatory. Details will be laid down in the consortium agreement.

### **Dissemination plan**

The dissemination activities will already start with the beginning of the project's workplan.

We distinguish between **dissemination of the project ideas**, the underlying principles and concepts on the one hand and the **dissemination of results** on the other hand. Concerning the effects and methodology of dissemination we distinguish between **direct, indirect and long-term** impact generating measures.

### Direct measures

- Club Lise and the PROMISE-teacher-teams should be established as early as possible. Both should be “congregations” of identification. Therefore a widespread **announcement policy** will start already at the start of the project. There should be generated a corporate identity to raise awareness and self-consciousness without stigmatisation of being disadvantaged.
- To promote the idea and to advertise the participation there will be done mailings and visits in schools, further more flyers, posters, file-envelops, T-shirts and bags will be produced.
- A **Website**, linking science/education servers will be installed. On the website the project partners will inform about the activities, workplan and results. There will be a platform for the teachers and pupils to present themselves and their work. If the platform is accepted by the public a discussion forum may be installed as well.
- The outputs of the PROMISE-teams and the Clubs Lise will be presented regularly in events for a larger audience in schools and universities with the necessary accompanying announcements.
- The most important results are *Good Practises* for an intercultural science education promoting the equality of chances. Education units or lessons to 2-3 certain science topics will be designed and evaluated. These will be distributed by internet, direct mailing to teachers and headmasters and by **presentation in schools**.

### Indirect dissemination

- **Special trainings** at university for science teachers having classes of cultural and linguistic diversity will be developed, basing on the work of the PROMISE-teachers and on the results of the conferences and symposia.
- Events, seminars and conferences, the dissemination of papers will always reach more people than the participants.
- It is important to **inform the parents** about the ideas and activities to get them involved and interested. They again will support the project and therefore raise the probability to reach the goals and bring the intended impacts to reality.
- The Club Lise-members will talk about their activities with colleagues and supported by direct measures like visible signs of Club memberships, T-shirts, bags, etc. the project will achieve **attention in all participating schools** and among the friends and relatives.
- However, teachers may be attracted by the membership of PROMISE-team or the contents and work these teams will produce, all teachers are confronted with multiculturalism in their classes in reality. There will be an **exchange** of the results, ideas and best practises among **teacher colleagues** to make their own work easier and more effective.
- These dissemination activities and policy might lead to the establishment of PROMISE-teams and Clubs Lise in other universities and schools not directly participating in the project.
- The most important dissemination factor is the **supply of educational material** and of Good Practises.

- There are approximately **1000 teachers** in the projects partner countries, who will be addressed and will get information about PROMISE. **16-40 teachers** will continuously work on PROMISE.
- In the second year of the project there will be **university courses** at least in Vienna and Berlin where results and findings of the project will be presented in order to inform teacher students about the project and about the outputs and experiences of the first year.

### **Long-term strategy and institutionalisation**

- To realise an impact and to reach the goals it is important to design a strategy on how to guarantee sustainability.
- Sustainability is required along two lines. The first track is to promote and preserve the PROMISE-teams and the Clubs. Lise to ascertain an ongoing production of ideas, Good Practises and results and **to evaluate and improve** previously developed results and adapt them to changing environments. The second track concerns the willingness of the institutions to integrate good practises and results into curricula and policy goals as ethic, gender and cultural mainstreaming requires supporting policies on the entire educational sector.
- The involvement of **all levels of hierarchy** will ensure success and sustainability. Pupils will get interested and directly promoted. Teachers will be involved to assure promotion for future generations of pupils and to be helped to perform more effective teaching by applying gender- and cultural mainstreaming methods. Thus specific teacher trainings will become an inherent part of general teacher trainings.
- The teachers and the pupils will need support of the next level as well, the headmasters. Therefore headmasters will be informed and involved in the project and the **ongoing process beyond the project**.
- Strategically a sustainable process of further development can only be guaranteed by **involving local, regional, national politicians** and maybe politicians on the European level to initiate changes leading to a higher equality of chances and a larger quantity of young people choosing a scientific career. Therefore experts in the field of migration, integration and education policy will work together with the PROMISE-teams on the one hand. On the other hand conferences will be organised where members of all levels mentioned above will be brought together to exchange the results of their work and to exchange their opinions and expectations for the future.
- A very important component is the exchange of experiences and knowledge of **host countries and countries of origin for a mutual understanding**, to draw policies of mutual acceptance and thus contribute to a capability-raising policy<sup>26</sup>.

### **6.3 Raising public participation and awareness**

Chapter 6.2 “Direct measures of dissemination” includes already measures to raise public participation and awareness such as:

- Producing information and advertising material
- Disseminating the information material in schools and other institutions of education

<sup>26</sup> On the capability approach see M.C. Nussbaum, 2000, Women and Human Development, Chapters II.6, III.8 and IV.7; A. Sen, Development as Freedom, 1999, Chapter 8; UN Commission of Human Security, 2003, Human Security Now, Chapters 3 and 7.

- Informing specially all kinds of information desks for migrant affairs
- Organising information meetings for parents and teachers
- Installing a website
- Organizing international conferences which are open to the public (PROMISE-conference, Club Lise international)

## 7. Workplan– for whole duration of the project

### 7.1 Introduction - general description and milestones

The workplan structure is broken down into 7 work packages including support activities and management activities. The tasks of work package 1 are producing pre-requisites for work packages 2, 3, 4, 5, that are strongly interdependent and organised in a well-defined manner as shown in 7.3.

#### **Monitoring und Evaluation**

Monitoring and Evaluation will be an inherent part of the project's activities.

The work of the PROMISE-team and of Club Lise will be monitored quantitatively by recording the meetings (number of persons, number of meetings, number of education units developed in teamwork).

Qualitative monitoring will be carried out by education experts accompanying the process of development of intercultural science lessons.

To evaluate the PROMISE-teamwork within the project already proved questionnaires especially developed for evaluation of teachers teamwork (project PIKO, Humboldt-Universität zu Berlin) and for evaluation of gender mainstreaming in classes will be developed for PROMISE and distributed among the project partners.

In the following a short overview of the different work packages is given.

- WP 1 Start-up phase
- WP 2 PROMISE-teamwork
- WP 3 Club Lise – promotion of girls
- WP 4 Club Lise international
- WP 5 PROMISE-conferences
- WP 6 Dissemination
- WP 7 Project management

The work packages address the strategic goals

- **Direct promotion** of very talented young migrants
- **Analyses of barriers** for migrants in science education
- Development of **best practices** of science teaching in classes of linguistic and cultural diversity
- Development of specific science **teacher trainings** for intercultural science education
- **Harmonisation** of science teaching methods of countries of origin and countries of residence
- **Institutionalisation** of promoting measures to guarantee long-term sustainability

#### General description

##### Work package 1: Start-up phase

The project will start on 01.10.2005. The start-up phase takes place in the first 3 months. The Start up meeting will take place in Vienna. In this first 3 months all necessary requisites for the following work packages will be elaborated. PROMISE-teams and Club Lise will be established in all project partners' countries. There will be a two-days-meeting of the steering committee and of the national coordinators where the methods of contacting schools, winning teachers for the PROMISE-team and girls for Club Lise, the tasks of research and the inputs will be defined. Additionally the venues and dimensions of the international conferences and meetings will be discussed and defined according to their specific purpose pursued. The national coordinators or education researchers, who will be part of the PROMISE-team and of Club Lise will contact schools, organise information meetings for teachers, parents and for science interested migrant girls in order to disseminate the projects idea. The next step will be the establishment of PROMISE-teams and Clubs Lise.

Output: Established Steering committee and PROMISE-teacher-team.

#### Work package 2: PROMISE-teamwork

In the first meeting of the PROMISE-team the contents and tasks of the teamwork will be defined. The PROMISE teams consist of teachers, who have experience in science teaching in classes of linguistic and cultural diversity and education researchers and temporary experts of migration, will meet monthly in order to discuss the experiences and develop new methods and best practices of science teaching in culturally diverse classes. The tasks of the teachers are scrutinizing the proportion of different languages and cultures in the science classes they teach and documenting the problems in teaching these classes. The tasks of the education researchers are interviewing the teachers and the pupils in order to get an overview of the problems in science education in classes of linguistic and cultural diversity. As science is a male dominated field the consideration of gender mainstreaming in science classes will be scrutinized. The results will be discussed in the PROMISE-team. In order to optimise the good practices the methods will be varied and tested again.

Output: Best practices for intercultural science education in classes of linguistic and cultural diversity in all the project partners' countries. Education units or science lessons on 2-3 topics of science.

#### Work package 3: Club Lise – promotion of girls

The national Club Lise consist of 6-14 girls of the age 16-19, 1-2 science students with migration background, 1 education researcher and guest scientists who will join the Club temporarily depending on the topic. The content of the Club will be planned by the students and researchers as well as the girls themselves as they should express their specific interests. The Clubs take place once a month at university. The content of the club's lessons can be laboratory work, visiting lectures, working on interdisciplinary topics, etc. The field is by purpose very open in order to support the interests the girls already have. The activity of the Club will be documented as good practice for promotion of talented migrant girls in choosing science careers.

Output: Best practices for promotion of talented migrant girls at science departments of universities of the project partners' countries.

#### Work package 4: Club Lise International

There will be an annual international meeting of all Clubs Lise, about 40 girls, and the staff of the Clubs. The meeting will be pre-organised by the permanent staff of Club Lise. The university at which the Club takes place, will be in charge of the

international meeting. The intent of the international meeting is to give science interested girls with background of migration the possibility for international networking. The national coordinators and Club Lise-staff will agree on a topic 2-3 months before the international meeting. The meeting will take 3 days. The members of all 4 Clubs Lise will travel to the Club Lise international. The travel will be prepared by the partner countries for their own Club Lise members. The activity of the Club will be documented as good practice for promotion of international scientific networking on junior students level.

Output: Internationally harmonised methods of promotion of talented migrant girls in choosing science careers.

#### Work package 5: PROMISE - conferences and symposia

In order to promote the dialogue between countries of origin and of residence in questions of science education there will be annual conferences and symposia organised by the particular university, where they take place. Representatives of the PROMISE-teams will meet in order to discuss their PROMISE-teamwork for harmonisation of different methods of intercultural science teaching. The conferences and symposia will be open to the public. Participants will be PROMISE-team members, education researchers, migration experts, gender mainstreaming experts, representatives of school authorities and politicians of education and society.

Output: Harmonised best practices of intercultural science education; Suggestions for school authorities and politics.

#### Work package 6: Dissemination

There will be direct and indirect dissemination activities. The project idea will be disseminated by information meetings in schools, international conferences, etc. Up to 1000 teachers of the 4 project countries will get information about the project. Best practices and harmonised methods in science teaching in classes of cultural and linguistic diversity will be disseminated by the participating universities as teacher trainings, through publications in science education papers and through websites. The projects idea will be disseminated within the next generation of teachers, teacher students, as there will be university courses about PROMISE in the second year of the project.

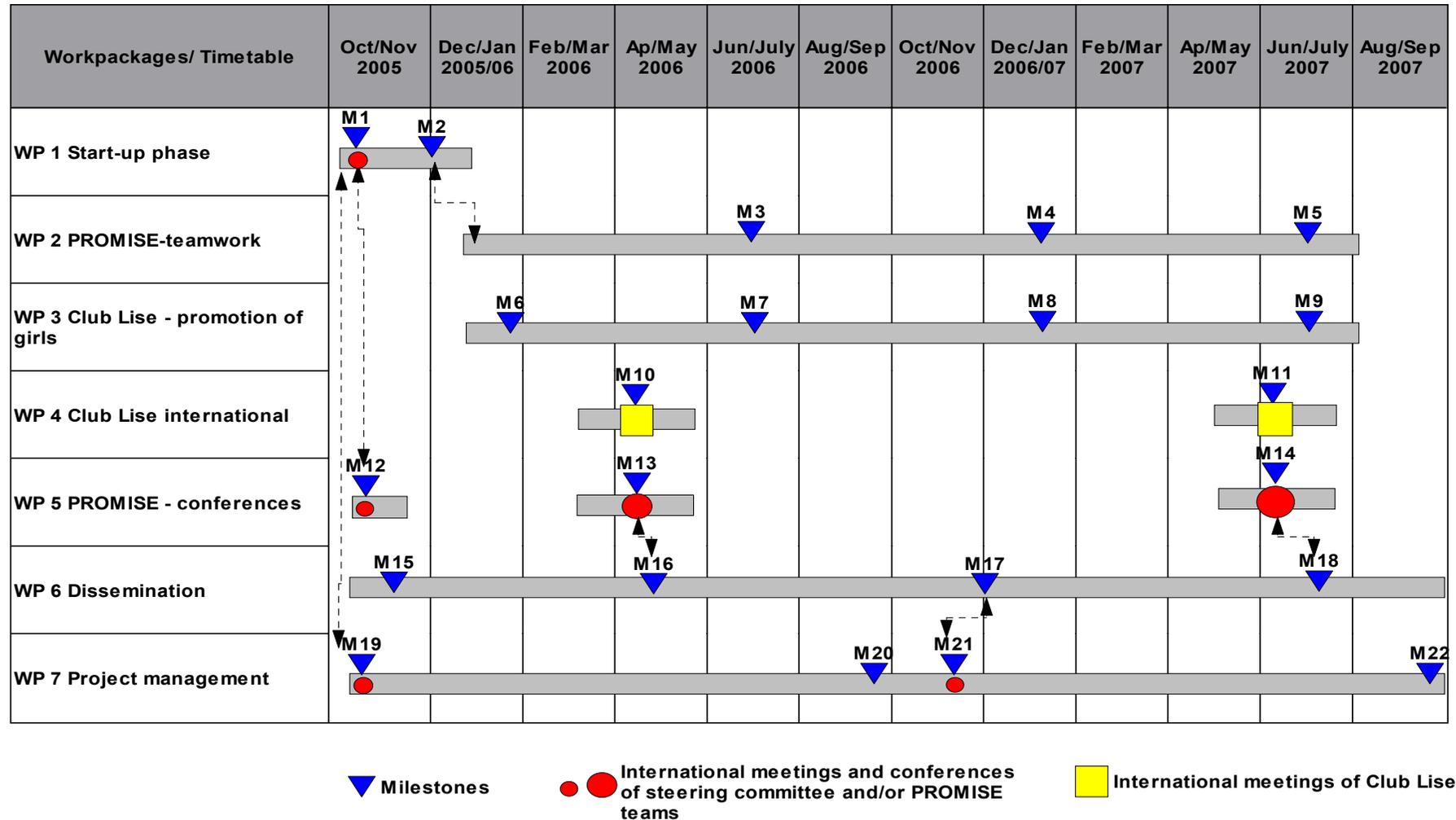
Output: Concepts for teacher trainings, university courses for teacher students at least in Vienna and Berlin, publications, websites, advertisement materials

#### Work package 7: Project management

The objectives of this work package are to manage the consortium activities in a professional manner. The basis of the management activities is the contract with the commission and the consortium agreement. The project management activities are carried out by the general project coordinator Dr. Klaus Starl (ETC Graz, A)

## 7.2 Work planning and timetable

### Gantt-chart



**Work plan**

<b>Months (of 24)</b>	<b>Milestones</b>	<b>Output</b>	<b>Activities leading to this output</b>	<b>Partners</b>
1-3	<b>M1</b> Established steering committee <b>M2</b> Established PROMISE-team: Defined inputs, structure and methods of PROMISE-teams and Club Lise; Defined work programme for the next 6 months	PROMISE-team Team of cooperating schools and teachers	<b>WP 1 Start-up phase</b> Start up meeting Building national networks between schools and universities Information meetings for teachers and headmasters	1,2,3,4,5
4-22	<b>M3</b> Report of PROMISE-teamwork in June 2006: Analyses of good practices in schools; Agreement on topics and didactical methods for developing best practices <b>M4</b> Report January 2007 <b>M5</b> Report July 2007	Documentation on specific barriers Best practices for intercultural science education (education units on 2-3 topics of science) Suggestions for school authorities	<b>WP 2 PROMISE-teamwork</b> Analysing the situation in science classes considering the linguistic and cultural diversities and gender mainstreaming criteria Regular meetings of PROMISE-team Teachers interviews about already existing good practices Developing intercultural science lessons Proving these lessons in science classes As a mutual process between PROMISE-team and teaching science in classes optimising the science lessons by discussing them in the PROMISE team in order to get best practices.	2,3,4,5
4-22	<b>M6</b> Established Club Lise: Ready infrastructure for Club Lise; Defined criteria for selection for Club Lise; Agreement on the topics <b>M7</b> Report July 2006 <b>M8</b> Report January 2007 <b>M9</b> Report July 2007	Best practices for promotion of talented migrant girls in choosing science careers. Documented workshops.	<b>WP 3 Club Lise – promotion of girls</b> Establishing the infrastructure for Club Lise at university (junior studentship, laboratories, rooms, etc) Informing teachers, headmasters, parents and the girls at information meetings Producing signs of identification with the Club like T-shirts, bags, etc. Mutual process between the Club and the PROMISE-team in order to optimise the promotion	2,3,4,5

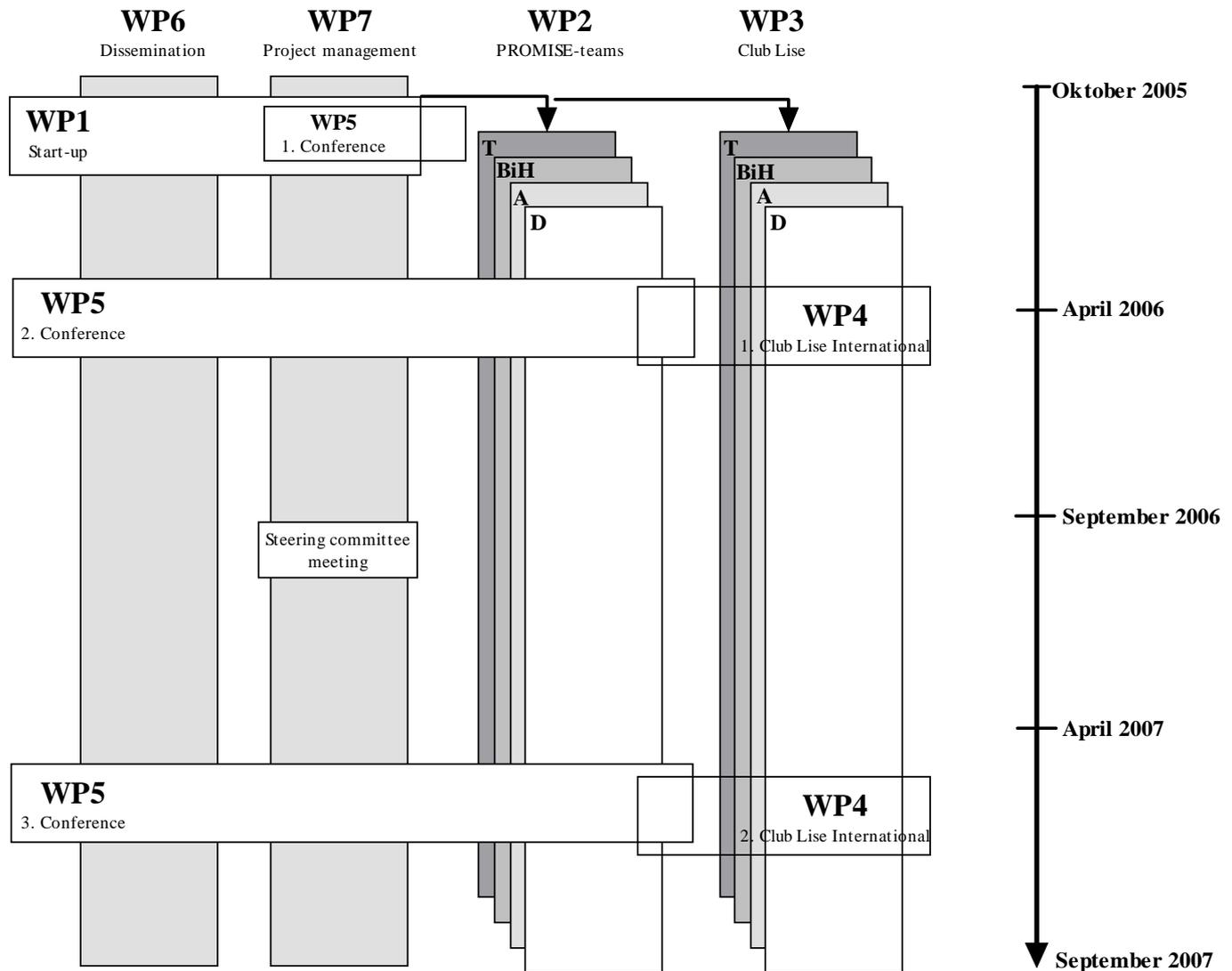
(8-)10 (20-)22	<p><b>M10</b> First Club Lise International, Spring 2006: Agreement on topic and focus of the international Club Lise as well as time and place; Programme of the meeting; Organisation of travel</p> <p><b>M11</b> Second Club Lise International, spring/summer 2007</p>	<p>Scientific networking of talented migrant girls on junior student level</p> <p>Harmonised best practices for promotion of talented migrant girls at university.</p> <p>C.L. international meetings</p>	<p><b>WP 4 Club Lise international</b></p> <p>Organising the international meeting; Organising the travel for the Club Lise members</p> <p>International communication of all Clubs Lise and PROMISE-teams about methods, topic, focus of the meeting</p> <p>Producing signs of identification for the international meeting</p> <p>Informing teachers, parents, school authorities</p>	1,2,3,4,5
(6-)8 (12-)14	<p><b>M12</b> Start up meeting of steering committee and leading persons of the PROMISE-teams, Okt. 2005</p> <p><b>M13</b> Conference of PROMISE-teachers and experts, spring 2006</p> <p><b>M14</b> Conference of PROMISE-teachers, steering committee, experts, school authorities, politicians (milestone contents invitation list, programme of the conference, organisation of infrastructure and working groups), spring/summer 2007</p>	<p>Suggestions for school authorities</p> <p>Institutionalisation of promoting activities</p> <p>Harmonised best practices for intercultural science teaching.</p>	<p><b>WP 5 PROMISE-conferences</b></p> <p>Organisation of the conference</p> <p>Advertisement</p> <p>Invitation of experts, school authorities, politicians</p>	1,2,3,4,5
1-24	<p><b>M15</b> Dissemination of start up meeting</p> <p><b>M16</b> Dissemination of output and reports of the PROMISE-conference, spring 2006</p> <p><b>M17</b> Dissemination of midterm evaluation meeting of steering committee, autumn 2006</p> <p><b>M18</b> Dissemination of output and reports of PROMISE-conference, spring 2007</p>	<p>Disseminated projects idea</p> <p>Disseminated best practices of science teaching in classes of linguistic and cultural diversity</p> <p>Established special teacher trainings; University courses for teacher students</p>	<p><b>WP 6 Dissemination</b></p> <p>Producing a website</p> <p>Designing and producing advertising material</p> <p>Producing information material</p> <p>Organising the conferences</p> <p>Publishing the results of the project</p>	1
1-24	<p><b>M19</b> Establishing of steering committee</p>	<p>Projects management</p>	<p><b>WP 7 Project management</b></p> <p>Contract negotiations</p>	1

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	<b>M20</b> Reports Sept./Okt. 2006 <b>M21</b> Steering committee midterm evaluation meeting, autumn 2006 <b>M22</b> Final report Sept./Okt. 2007		Strategic and administrative coordination of the project Communication with EC Financial statements Final reports	
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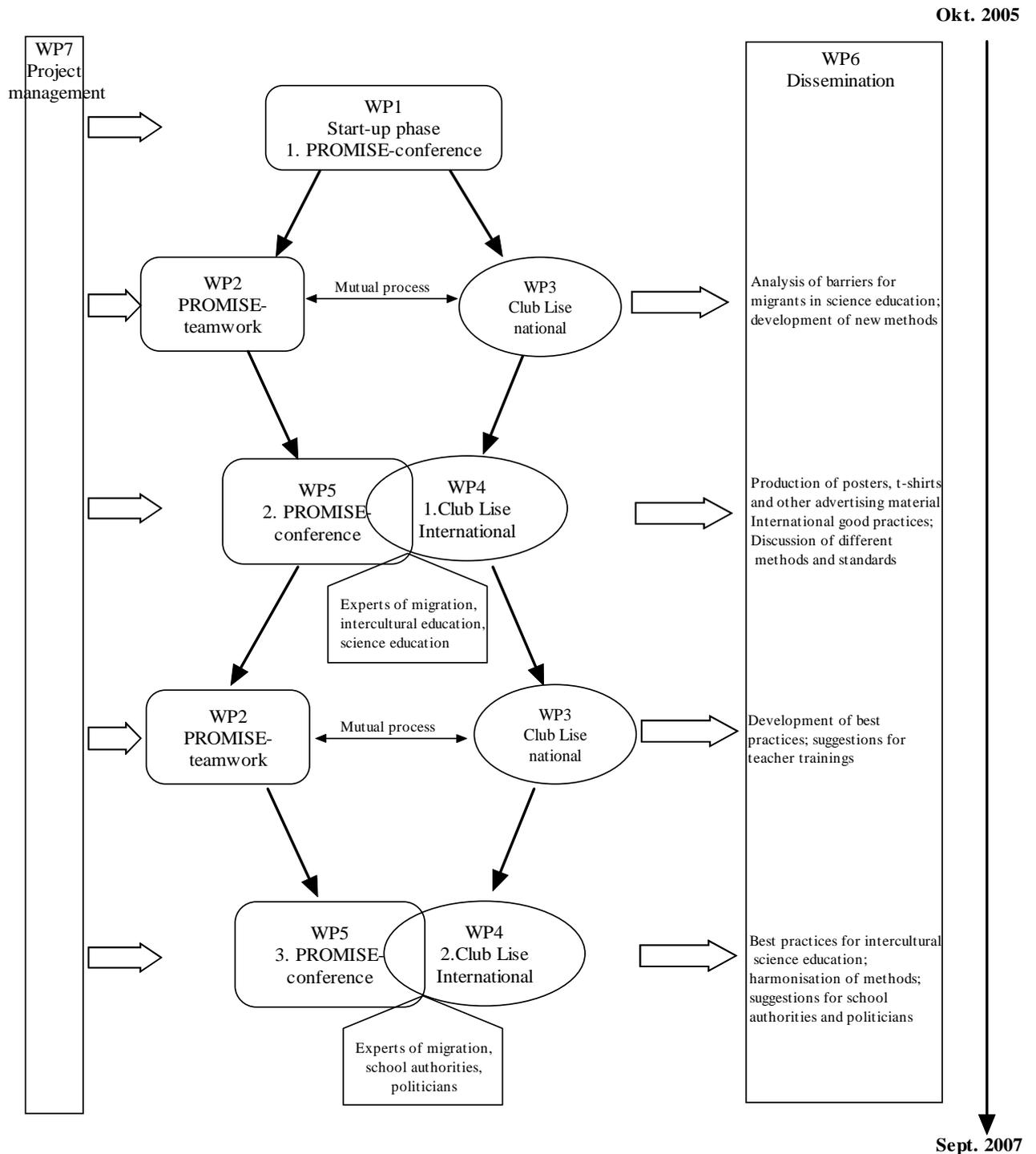
### 7.3 Graphical presentation of work packages

#### Overall structure of interdependencies



Workpackage	Participants
WP1 Start-up phase	Steering committee, scientific leaders of all PROMISE-teams
WP2 PROMISE-teams	National: Scientific leader of the team, 4-10 science teachers, experts (temporarily)
WP3 Club Lise	National: 6-14 girls, scientific leader of Club Lise, 1-2 students
WP4 Club Lise International	International meeting of all Clubs Lise (24-56 girls, 4 scientific leaders, 4 students)
WP5 PROMISE-conferences	International meetings of all PROMISE-teams (4 scientific leaders, 16-40 science teachers) and of experts of migration, gender mainstreaming, intercultural education, politicians
WP6 Dissemination	ETC-Graz, Austria; Think Ing., Germany
WP7 Project management	Dr. Klaus Starl, ETC-Graz, Austria

**Detailed structure of interdependencies**



## **7.4 Work package descriptions**

### **(1) Start – up phase**

#### **Objectives**

To elaborate the necessary requisites to develop short-, medium- and longterm promotion activities of migrants.

To establish national and international networks between schools and universities as preparation for PROMISE- and Club Lise-teambuilding.

To establish a PROMISE –team consisting of teachers and education researchers.

To specify the inputs, methods and topics as a basis for developing new methods in science education.

#### **Description of work**

The project will start on 01.10.2005.

In the start-up phase all necessary requisites for the following work packages will be elaborated.

Start-up meeting; Establishing the steering committee

Detailed definition of the work programme of the next 6 month: Dates and contents of the next meetings and conferences will be fixed.

Specification of the national inputs, preparation of establishing PROMISE-teams and Clubs Lise in every project partners' country: The national coordinators will contact at least 4 schools with classes of high linguistic, cultural or ethnical diversity in order to build up a network of science teachers and scientists (PROMISE-team). Further girls, their parents and students will be contacted by education researchers for Club Lise.

Specification of the tasks of the PROMISE-teams and Clubs Lise

Definition of structure of the PROMISE-teams and of Club Lise

## **(2) PROMISE - teamwork**

### **Objectives**

- To set activities for indirect promotion of migrants
- To scrutinize the proportion of migrants and the diversity of languages in classes of cultural and linguistic diversity
- To document and discuss the special needs and problems in classes of cultural and linguistic diversity
- To collect and document teachers experiences and best practices for teaching in classes of linguistic and cultural diversity
- To scrutinise the consideration of gender mainstreaming in science classes
- To establish a mutual process between the PROMISE-teams and Club Lise
- To develop best practices for science education in classes of linguistic and cultural diversity
- To develop tests or special interviews for pupils in order to get feedback about the impact of the best practices on pupils.
- To develop teacher trainings for science education in classes of linguistic and cultural diversity
- To evaluate the good practices, the gender and ethic dimensions.

### **Description of work**

The national PROMISE – team consists of 4-10 science teachers of at least 4 different schools and one national PROMISE-team coordinator (who is not the projects coordinator!). The team will meet monthly.

The tasks of every national PROMISE-team will be:

- Scrutinize the proportion of migrants in their classes in order to get an overview of the diversity of pupils as target group of science education.
- Education researchers will interview teachers about their impression of specific barriers for migrant pupils and of themselves when teaching in classes of cultural and linguistic diversity. These interviews will be documented and discussed in the PROMISE-team. The data will be broken down into 2-3 special topics of problems. On basis of these topics concepts of new methods of science education will be developed in the next team meetings.
- Teachers will be interviewed in order to get to know already existing good practices in intercultural science education.
- Education researchers and experts of gender mainstreaming will interview teachers about consideration of gender mainstreaming when teaching science classes. The results will be documented and discussed in the PROMISE-teams. Suggestions for consideration of gender mainstreaming will be elaborated.
- The students and education researchers working in Club Lise will present and discuss their experiences and problems in the PROMISE-team.
- On basis of the collection of experiences and problems, as a first step, singular science lessons on a certain topic will be planned by the PROMISE-team following the elaborated criteria. These lessons will be given at school or at university (school-labs) by the teachers. The pupils will be tested or interviewed to prove the success of the lesson. As a mutual process the teachers again give a report about the lesson in order to optimise the lessons and to develop and prove best practices.
- Following this model 7-10 science lessons on 2-3 science topics will be developed as best practices.

- Criteria for a successful science education for classes with cultural and linguistic diversity will be elaborated.
- Schools' headmasters and parents will be involved in order to develop long term strategies for successful intercultural science lessons.
- The meetings will be documented.
- Material for science lessons will be developed.
- Organisation of international PROMISE-meetings and conferences under participation of school authorities and education politicians.

**(3) Club Lise – promotion of girls****Objectives**

To set activities for direct promotion of migrants in science education  
To establish intercultural girls working groups, Club Lise, for very talented migrant girls (age 16-19) as a direct promotion of migrant girls in choosing science careers.  
To plan and document the Club Lise workshops.  
To provide opportunities for international scientific networking on junior student level by organising international Club Lise meetings.

**Description of work**

Building of the permanent Club Lise team in every partner country (Germany, Austria, Turkey, Bosnia & Herzegovina). There will be set up 4 Clubs Lise within the project. The Club Lise will consist of students and education researchers.  
Preparing the infrastructure for the Clubs. At Humboldt University the Club will meet in UniLab-Adlershof.  
Criteria for selection for Club Lise will be defined.  
The Club Lise team in cooperation with teachers will contact talented girls in schools to win them for Club Lise. There will be information meetings for the girls at schools. Flyers and Posters will be produced and distributed.  
Special information meetings for school authorities and parents will be organised.  
The program of Club Lise will be elaborated by the students and education researchers in cooperation with the PROMISE-team. The Club will take place at least once a month at university. The Club's activities will be interdisciplinary in order to give a broad overview of science studies. The work of Club Lise will be collected and documented as good practice for scientific work in intercultural teams.  
Production of T-Shirts, bags, etc. as visible sign of Clubs membership.

**(4) Club Lise International****Objectives**

To give possibility for international scientific networking on junior student level by organising international Club Lise meetings.

**Description of work**

Annual international Club Lise meetings will be organised. The meetings will be prepared and organised by the Club Lise staff and the university at which Club Lise International takes place. The members of all 4 Clubs Lise will travel to this meetings.

The travel for each Club Lise will be organised by each partner country itself.

Organisational standards, such as social insurance, etc, will be elaborated by the steering committee.

There will be approximately 50 girls. 3 days long the girls can choose between different workshops concerning one main topic which will be discussed in all workshops.

T-Shirts, bags, etc. as visible sign of Clubs membership will be disseminated.

The science students and education researchers working in Club Lise will meet and discuss their experiences. The Clubs Lise workshops will be collected as best practices for scientific work in intercultural groups.

Information material will be disseminated among teachers, parents, school authorities.

**(5) PROMISE-Conferences****Objectives**

To establish a dialogue between countries of origin and countries of residence  
To set activities of harmonisation of different methods in science teaching  
To develop international best practices for intercultural science teaching  
To harmonise teacher trainings for teaching classes of cultural and linguistic diversity  
To set activities of institutionalisation for sustainability of migrants promotion beyond the projects and the participants.  
To evaluate the elaborated *Good Practices*, the gender and ethic dimensions.

**Description of work**

Setting measures to enable continuity of PROMISE-teachers teamwork and Club Lise as instruments for the development of methods of intercultural education in science, complementary at school and at university.  
Information of school authorities about best practices.  
Developing general methods and tools for education, where the gender dimension and the linguistic and cultural diversity are taken under consideration.  
Suggestions for curricula.  
Integrating politicians in the discussion process.  
Organising conferences with participation of politicians, school authorities, researchers and experts.  
Proving and optimising the good practices on international level.  
Ethic and gender monitoring.  
Establishing specific training for teaching cultural and linguistic diverse classes as an inherent part of teacher training; train the trainers - activities

**(6) Dissemination****Objectives**

To disseminate the best practices of intercultural science teaching-methods nationwide and globally.

**Description of work**

Producing a website with links to university- and school servers

Design and production of flyers, posters, T-shirts, bags, etc. with logos of Club Lise and PROMISE

Producing information material for pupils and teachers, disseminated through visits in school, internet, mailings

Informing 1000 teachers about the ideas of the project via postal mail within the first year.

Annual information meetings for parents

2 Conferences, open to the public

Information of school authorities and politicians

Publication of the results and the best practices

University courses for teacher students in Austria and Germany

**(7) Project Management****Objectives**

To manage and administrate the project activities and finances.

**Description of work**

Contract negotiations

Making a contract between the members of the consortium

Strategic and administrative coordination of the project

Communication with the European Commission

Administration and distribution of the finances

Reporting

Financial statements

Final reports

## 8. Consortium description

### Competencies of the consortium

ETC	Social science	} Competencies of the PROMISE consortium
HU-Berlin	Science education	
Uni Vienna	Science education	
Uni Sarajevo	Physics	
Yildiz Istanbul	Education	
Gesamtmetall	Employers	

### Participants and consortium

Nr	Name and Country Description of role and key staff	Complementary skills and expertise
1	<b>European Training and Research Centre of Human Rights and Democracy , (ETC Graz) - Austria</b>	1,3,4,5,6,7,8,9,10
	<p>The ETC Graz, founded 1999, understands itself as a capacity-building institution in the field of human rights and democratisation. With a special focus on Southeast-Europe ETC organises and implements Trainings for all groups of societal multipliers like teachers, judges, lawyers, police and military forces. ETC research activities target at curricula development for human rights education. A special focus of ETC's work is laid on anti-discrimination, measures against racism, migration and minorities. Additionally, ETC is specialised on the co-ordination and management of research and training projects.</p> <p>Role in PROMISE: Project coordination. Dissemination. Gender and ethic monitoring of the concept, the PROMISE teams and the Clubs Lise.</p> <p><b>Dr. Klaus Starl</b> Project coordinator. Executive Secretary of ETC, business consultant (self employed). Experience in project development and management, currently managing the EU project ADTJ (GD Empl; VS/2004/0469). Expert in legal informatics, project management, quality assurance, personal data protection and anti-discrimination. Author of</p>	1,3,4,5,7,8,9,10

	<p>several books and the quarterly 'Organisation of law firms'. Experience in adult education.</p> <p><b>Prof. DDr. Renate Kicker</b> University teacher, member of the CoE Committee for the Prevention of Torture (CPT). Director of the ETC, bearer of the Styrian Award on Human Rights 2004. Expert in human rights law and gender issues. Working experience in several CoE, UN and EU projects. Scientific authorship.</p> <p><b>Dott. Maddalena Vivona</b> ETC-employed Researcher. Co-Editor of the quarterly 'Human Security Perspectives', member of the organisational board of the ETC Worldwide Summer Academy on Human Security. Working experience in Human Rights, gender issues, Human Security and education. Migration background.</p>	<p>1,3,4,5,6,10</p> <p>1,4,5,6,8</p>
<b>2</b>	<b>Humboldt-Universität zu Berlin, Physics Education Department, Germany</b>	<b>1,2,3,4,5,7,8,9,10,11</b>
	<p>The Physics Education Department of Humboldt Universität plays a key role in several teacher trainings projects (PIKO, SINUS). In 2004 the school lab "UniLab" was founded, a place, where new teaching concepts will be elaborated in cooperation with students and teachers. These science lessons will be tested on pupils who visit the lab with their teachers.</p> <p>Role in PROMISE: Implementation of the scientific and substantial work. Collaboration with schools. Research.</p> <p><b>Mag.<sup>a</sup> Tanja Tajmel</b> National coordinator for Germany. Researcher at the Physics Education Department, Humboldt-Universität zu Berlin. Experience in teaching physics at school. Experiences in developing new methods in science teaching (project IMST). Innovations in interdisciplinary science education methods (EUDIST).</p> <p><b>Prof. Dr. Lutz-Helmut Schön</b> University teacher for Physics Education. Research in science education, especially phenomenological optics. Experience in several research and development projects in different fields of science education, supported by EU, DFG, BMBF and others. Concept, design and realisation of the school lab "UniLab", with a focus on participation of teacher students. Expert in teacher training in teams (SINUS-project, PIKO-project).</p> <p><b>Gabriela Ernst</b> Teacher of physics and mathematic in classes with high a proportion of migrants. Experience in teacher team work and in developing new methods of physics education (SINUS-project) and teacher trainings. Collaborator at the UniLab-Adlershof of Humboldt Universität, developing</p>	<p>1,2,4,5,8,10</p> <p>1,2,3,4,7,8,9,10</p> <p>2,3,4,7</p>

	modules for phenomenological optics and interdisciplinary science education at the UniLab.	
<b>3</b>	<b>University of Vienna, Department of Theoretical Physics, Austria</b>	<b>1,2,3,5,7,8,9,10,11</b>
	<p><b>University of Vienna, Faculty of Physics</b>  Four institutes (experimental physics, nuclear physics, theoretical physics, material physics). Research (diploma, dissertation, research project) and teacher training. About 100 professors and assistant professors in different fields. Physics Education Group with a permanent staff of two professors, one senior lecturer and teachers.</p> <p><b>Dr.<sup>in</sup> Helga Stadler</b>  Role in PROMISE:  Implementation of the scientific and substantial work. Collaboration with schools. Research.  University teacher for Physics Education. Research in science education with a main focus on gender issues and professional development of science teachers. Experience in projects supported by the Austrian Ministry of Education: concepts, designs, and realisation of IMST<sup>2</sup> (“Innovations in Mathematics, Science and Technology Teaching” 2000-2004, subprojects “Learning and teaching Processes”; “Gender Mainstreaming and Gender Sensitivity”, both in cooperation with H. Jungwirth), MISE (“Motivation in Science Teaching”, 1998 – 2004, cooperation between Russia, Austria and the Netherlands); “Female Students in Technical Schools” 1995-1997), “Math and Science Teaching, Computers and the Construction of (Gendered) Subjects” (FFORTE, bmbwk, 2005-2007). Expert in teacher training teams (PFL).</p> <p><b>Mag. Susanne Neumann</b>  Role in Promise: supporting teachers in developing teaching material; Evaluation; Club LISE, dissemination. High school teacher of physics and mathematics; ERASMUS year in Belgium; adult education in different projects; organisation of a teachers club; expertise in Webdesign.</p> <p><b>Clemens Nagel</b>  Role in Promise: Organising teachers meetings; supporting teachers work on the content level (using multimedia in physics class).  Teacher Student, working on his diploma in physics education; tutor, experiences in the EU Project E-Phys.; expertise in the use of computers in physics class and evaluation</p>	<p>1,2,3,5,7,8,9,10</p> <p>1,2,3,7,11</p> <p>1,2,10</p>
<b>4</b>	<b>University of Sarajevo, Department of Physics, Bosnia and Herzegovina</b>	<b>1,2,3,4,5,7,8,9,10</b>

	<p>Role in PROMISE:  Research in the subject of the project as the institution from the source country. Implementation of the results. Cooperation with the BiH (Bosnia-Herzegovina's) Diaspora associations in the European countries (Austria, Germany, Denmark, Sweden etc.)</p> <p><b>Prof. Dr. Lamija Tanovic (Mrs.)</b>  University teacher in Physics (teaching courses of General Physics, Solid State Physics and Atomic and Nuclear Physics) with the long teaching and research experience, member of the European Academy of Science from Brussels, B&amp;H (Bosnia-Herzegovina's) representative in the Bologna Follow-Up Group (BFUG), B&amp;H NCP (National Contact Point) for cooperation with European Commission Directorate General Joint Research Centre (EC DG JRC).  Experience in Higher Education reform projects (TEMPUS), as well as in EC SSA FP6 projects.</p> <p><b>Mag. Zalkida Hadzibegovic (Mrs.)</b>  Assistant Professor at the Physics Dept. with the long teaching experience in Physics teaching. Member of the B&amp;H Physicist Association Board for many years. Experience in preparation activities for competitions in Physics on various levels (national and international).</p> <p><b>Ms. Maja Dučić</b>  Assistant at Physics Dept. with some experience in teaching and project management.</p>	<p>1,2, 3,4,5,7,8,9,10</p> <p>1,2,3,5,8,10</p> <p>2,5,7,9</p>
5	<p><b>Yıldız Technical University, Istanbul, Science Education, Faculty of Education</b></p>	<p>1,3,8,9,10</p>
	<p>Yıldız Technical University, with nine faculties, two institutes (Social Sciences Institution and Science Institution) and one community college, is one the the oldest and the biggest universities in Turkey. The university has three campuses one of which is situated in the city center and the others are in the suburbs of Istanbul. The newest faculty is the Faculty of Education which was founded a year ago. Faculty of Education is carrying out a PhD program in the field of "Curriculum and Instruction", seven MS and MA programs in the fields of "Educational Administration and Supervision", "Curriculum and Instruction", "Teacher Training for Maths, Chemistry and Physics", and "Foreign Language Teaching" and two BA programs in the fields of "Computer and Instructional Technologies" and "Teaching English as a Foreign Language".</p> <p>As well as Phd, MA, MS, and BA programs, the Faculty of Education carries out trainings for in service teacher training for the teachers of various subjects in the state and private schools across Istanbul.</p> <p><b>Prof. Dr. Münire Erden</b></p>	<p>1,3,8,9,10</p>

	<p>University teacher for Curriculum Design and Instruction. Research in teaching and teacher education. Experience in several research and development projects in different fields of teacher education and project evaluation, supported by UNICEF and others. Expert in teacher training in teams. Author of several books.</p> <p><b>Dr. Seval Fer</b> Seval Fer, Ph.D., is an Assistant Professor of Educational Sciences Department, in the Curriculum and Instruction program, at the University of Yildiz Technical, Istanbul, Turkey. The author has published two books and several articles related to curriculum and teaching and has taken part in national and international projects of the Ministry of Education in Turkey, OECD/INES (Education Indicators) Project and World Bank Funded Project concerning curriculum and instruction.</p> <p><b>Deniz Canca</b> Research assistant, in the department of science and mathematics teaching for secondary school. BS on engineering physics and MS on physics education. Expert in teaching science. Experience in Erasmus 2003.</p> <p><b>Seda Biryan</b> Research assistant at the Department of Curriculum and Instruction. 8 years of teaching experience. Experience in Comenius, Grundvig, and Erasmus projects.</p>	
<b>6</b>	<b>Arbeitgeberverband Gesamtmetall, Berlin</b>	<b>3,4,6,7,8,9,10</b>
	<p>Cooperation and network partner, collaboration with employers associations' school networks "mint-ec" and "Schule-Wirtschaft"</p> <p><b>Dipl.-Päd. Wolfgang Gollub</b> Project Manager Public Relations of the Confederation of Metal and Electronic Industries Employers Associations (Gesamtmetall), Project coordinator of the employers associations' initiative THINK ING., expert in private public partnership project management on educational issues.</p>	3,4,6,7,8,9,10

## Complementary expertise :

- 1 research, scientific publishing
- 2 class room teaching
- 3 teacher training, adult education
- 4 experience in working with migrants
- 5 ethical issues, gender issues, personnel data protection
- 6 legal expertise
- 7 dissemination, marketing
- 8 project-/event management
- 9 quality management
- 10 networking / collaboration with governmental authorities
- 11 webdesign