



Editorial

Introduction

Final seminar in
India

Final seminar in
Africa

Final seminar in
Europe

A closer look at the
guidelines

Dear readers,

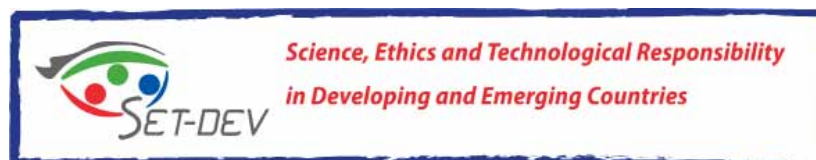
This is the last SET-DEV (Science, Ethics and Technological responsibility in Developing and Emerging countries) newsletter covering the final phase of the SET-DEV project launched in 2008 to support the Indian and African research systems in developing their own ethical perspectives in the context of Scientific and Technological Research (STR).

The final phase of SET-DEV envisaged the presentation of the main outputs of the project: the Indian and African Manifestos, the Guidelines for Socialisation of Science, Technology and Innovation and the Pilot Programme carried out in India and Kenya during the implementation of the project.

The project results were successfully presented in three final seminars, held in the 3 countries represented by the project consortium, where the partners had the occasion to discuss with the local stakeholders about the future implementation of the project activities.

The end of the project coincides, indeed, with the launch of a new phase, where the study comes to the action, where the final outputs of the project circulate broadly at regional, national, international level, to all categories of stakeholders, from citizens, local communities, CSOs, Universities and research centres, to representatives of Ministries and Governments.

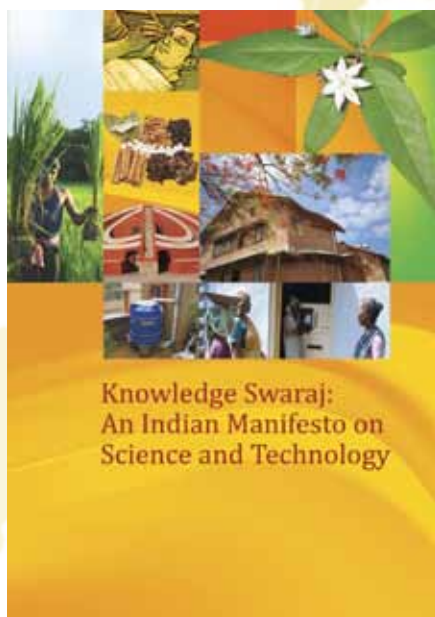
Now, the successful results of SET-DEV project become publicly available and need to be taken forward at global level.



In the following pages the reader can discover more about the final outputs of the projects presented during the three main events organized by the partners that are briefly summarized here.



Officially launched during the annual African Technology Policy Studies Network (ATPS) conference in Cairo, Egypt, last November 2010, **the African Manifesto for Science and Technology** was led by ATPS in collaboration with African, Indian and European partners and stakeholders, under the framework of SET-DEV. The Manifesto is a tool for shaping shared visions about Science, Technology and Innovation (STI) in Africa, for Africans, by Africans, in a multi-lateral dialogue. The preparation of the Manifesto was recently completed and presented in the final project seminars.



The Indian Manifesto for Science and Technology, called "Knowledge Swaraj", was first presented in September 2009 at the University

of Hyderabad and then brought at the local level within the different communities. The Manifesto is inspired by the 'Hind-Swaraj' and provides an innovative framework that can reposition India's knowledge capabilities into a plurality of knowledge systems that also looks at the responsibilities of justice and sustainability.

The Guidelines for Socialisation of STI offer a recommendation on how science, technology, and innovation can be better integrated into society and be more relevant to respond to society's needs. The Guidelines are the result of dialogue and cooperation between representatives of major scientific cultures of the contemporary world: European, Indian and African. The document provides some indications about the development of STR and it is also intended to be a practical contribution to promote effective collective responsibility in S&T.

As announced, these project outputs were presented in the occasion of 3 dedicated seminars.

The first seminar "The Ethical Dimension of Knowing and Acting: Science and Technology in the 21st Century India" took place in the University of Hyderabad, India, on the 29th of March 2011 with participants mainly from universities, research centers and Civil Society Organisations (CSOs).

The second was held in Nairobi, Kenya, on the 29th of April 2011 under the title "Sciences, Ethics and Technological Responsibilities in Developing and Emerging Countries", and saw the participation of high level representatives from 27 different African countries.

The final seminar named "Research, Innovation and Development: the Social Fabric of Science. The policy and ethical perspectives of a dialogue among India, Africa and Europe", celebrated on the 3rd of May 2011 at the European Economic and Social Committee (EESC) in Brussels with the attendance of high level speakers and participants from the European Commission, the European Parliament, EESC, representatives of European as well as international countries (also Kenyan and Indian Embassies) and experts in social sciences, ethics and research. The focus of the discussion was on the implementation of the project in the near future and in reference to the next European Framework Programme.

The Ethical Dimension of Knowing and Acting: Science and Technology in the 21st Century India

HYDERABAD, 29th MARCH 2011

On March 29th, the first presentation of the project results took place in India with an open seminar held at the University of Hyderabad with around 50 participants from different Universities and University departments, including PhD students, researchers, professors; representatives of civil society organisations and Indian local Institutions; but also project partners coming from Europe and Africa.

The first part of the seminar was opened and closed respectively with the highest representatives of the University of Hyderabad: namely Prof. G. Nancharaiah, Dean of the School of Social Sciences and Prof. Kannan, Pro Vice-Chancellor of the University of Hyderabad, who chaired the session.

Prof. Haribabu, representing the Hyderabad University in SET-DEV, introduced the project and launched the seminar. Dr. Alfonso Alfonsi from Laboratorio di Scienze della Cittadinanza (LSC) SET-DEV scientific coordinator gave an overview of the project and its results clarifying that the SET-DEV project could create a global relationship between science and society bringing a greater responsibility towards scientific and technological research. The main objectives of the project are:

- To strengthen the ties between science technology and society
- To contribute to democratise the science and technology
- To allow a cross learning between Africa, India and Europe

Dr. Alfonsi then concluded with the importance generated by the project with its trilateral dialogue among India, Africa and Europe.

The second part of the morning was chaired by Prof. Bijker from Maastricht University and was specifically dedicated to the Pilot Programme and the demonstrations of the case studies. This presentation was followed by a general debate dealing with SET-DEV meaning and results.

Prof. Shambu Prasad, from the Centre for World Solidarity (CWS) and Knowledge in Civil Society (KICS), was the first to take the floor. He presented the Indian Manifesto, explaining that one of the key elements of the preparation of this document was "how to translate the Manifesto in different contexts".

He also pointed out that since there is a high level of imbalance between the Indian science and technology and the society at large, there is an extreme need for society to "catch up" with science. Taking into account this reflection, he concluded stressing that it is crucial to consider the Indian Manifesto the document to support the process of socialisation of science and technology.

This presentation was followed by the introduction of the African Manifesto given by Ms. Wairimu Mwangi, from ATPS. Ms. Mwangi explained that the African Manifesto is a crucial and critical document for the development of a multilateral dialogue among the three countries represented: Europe, Africa and India. She also pointed out the importance of the African Manifesto is related to the emergence of a strong Political Will for the use of STI as the engine of development in Africa. Ms. Mwangi concluded stating that "...if we don't change



now we will be more vulnerable in future.”
 “The Manifesto is important because it is a catalyst for elevating and integrating the local knowledge system into the global knowledge systems, or something to that effect. The Manifesto argues for full socialisation of science, technology and innovation in Africa as a pre-requisite for a sustainable development in Africa”.

Dr. Daniele Mezzana, from LSC in Italy, explained his main role in the project, as the editor of the project Guidelines, the other important output complementary to the two Manifestos and the Pilot Programme. Dr. Mezzana affirmed that these Guidelines, which are based on SET-DEV three years’ experience, are intended to be a practical contribution on how to promote an effective and collective responsibility in science and technology along with a practical guide on how to increase the socialisation of science, technology and research.
 A lively questions-answers session animated the second part of the presentations that mainly focused on the implementation process for the two Manifestos and on the dialogue to be generated among science and society.

Final remarks were given by Prof. Shambu Prasad who affirmed that “we should link traditional knowledge to the new technologies” in a way to understand how to modify and adapt it to the different cases and take it further. We need to understand the situation and work out a sociology of practice. He then concluded urging for the recognition of opportunities that exist and can bring the country to benefit from its own potential and resources.

After the lunch break, Prof. Javed Iqbal of the Institute of Life Sciences in Hyderabad chaired the seminar. Prof. Prasad started with a showcase of the results of the pilot programme in India and introduced the presentation of the case studies. He stressed the importance for science and innovation of “knowledge dialogues with diversified experts” and experiences, “socialisation

needs new capacities” and a shared practice. Specific details on each case study were given directly by the representatives of these.

The first on “Healthcare and women: case study on Hysterectomy”, was given by Dr. Kameswari and Dr. V. Prakash of Life-HRG, immediately raising the attention of the entire room. This case that was selected also as the one to be officially presented in the second seminar in Nairobi, was certainly the most distressing for everybody. The medical malpractice in terms of unnecessary hysterectomies being practiced has been documented for years by the local NGO of medical doctors that showed with real figures and studies. It was recognised



that the frame of the Indian Manifesto and the SET-DEV project has finally pressed the Government of India to take action. The work carried out by both Dr. Kameswari and Dr. V. Prakash is certainly remarkable and worthy of praise.

Other case studies presented by Mr. John D’Souza focused on “Sustainability and plurality in built environment” and on “Democratisation of the Science and Technology of Climate Change” and Ms. Nagalakshmi Chelluri of the University of Hyderabad presented the Pilot programme in India, highlighting the several workshops carried out during the SET-DEV programme.

As for the African countries, some examples of case studies and the process of the Pilot programme was highlighted by Ms. Mwangi, from ATPS.



Prof. Iqbal finally remarked that “in India, we often just follow the western world model” but what “we need to work on is the localisation”. He concluded pointing out that in India “technology and science are not late, we are advanced in several technologies, but we need education in science”.

The second part of the afternoon session was chaired by Prof. Bijker and dedicated to future perspectives and follow-up activities for both Manifestos and Guidelines.

Dr. Alfonsi began this panel urging the importance of developing an effective and concrete way to assure the follow-up of SET-DEV results. He also announced the decision to hold a third and final seminar in Brussels in order to raise the awareness

of the European Institutions and to enhance an equal European and international participation.

The debate went on with parallel analysis of the situations of science socialisation in India and in Africa and about the fact that when a scientist is speaking to the community it is differently perceived.

"A serious unwillingness to put in the technology in place because of the unknown and the different value of science" as Prof. Bijker said. "There is a lack of a system that is facing the problems of the community when we do not have technology" and "there is a need for a synchronisation of the value of science with the society", he then added.

Before concluding the afternoon session an important question was put on the table by the chairman: "What's the next step? What will India and Africa do with the Manifestos?"

As for India, Prof. Haribabu prioritised the need of "dissemination" because the added value of the Manifesto is "gathering



- A rethinking globally
- Builders Manifesto – Umair Haque
 - "What leaders "lead" are yesterday's organizations. Today's biggest human challenge isn't leading broken organizations slightly better. It's building better organizations in the first place. It isn't about leadership: it's about "buildership", or what I often refer to as Constructivism.
- Mahatma Gandhi vs Barack Obama
- What would this mean for S&T organisations today?

people and discussing about ethics in science". New indicators were proposed for measuring the economic value and it would be interesting for social scientists to make new criteria for calculating the social and economic value.

Prof. Bijker ended the discussion pointing out that the Manifestos will not create any kind of dichotomy between local and scientific knowledge and will not hammer down the traditions but will find new ways of collaboration. The ideas, like looking for alternative spaces or fora, thinking of new alliances with new sciences or micro-economics, or reinventing the science education systems are all ways to bring forward the SET-DEV project.

Thanking all participants, Prof. Haribabu announced that "this is only the beginning of a long journey to see how the Manifestos can contribute to various people."



Science, Ethics and Technological Responsibility in Emerging and Developing Countries

NAIROBI, 29th APRIL 2011

Held at the Hilton hotel in Nairobi (Kenya) on the 29th of April, the event, organised by ATPS, drew participants from across more than 27 countries.

The seminar was opened by the welcome speech of Dr. Kevin Urama, the Executive Director of ATPS, who explained the agenda and introduced all the partners of the SET-DEV project. He was immediately followed by the welcoming remarks made by Prof. Shaukat A. Abdulrazak from NCST, ATPS Board member. Given that the project was coming to an end, he mentioned that it was really important at that point to present the draft of its main results in order to share knowledge and to promote coordination. Prof. Abdulrazak concluded affirming that he wants to believe that "here everybody can do the same in their own countries in Africa. We are still a sleeping giant, if it's not us who will do the big change, it will not be done".

Dr. Alfonso Alfonsi, scientific coordinator of the SET-DEV project, was the first to take the floor. He gave a general introduction to the SET-DEV project and its outputs; namely the two Manifestos the set of Guidelines. He recalled the several and fundamental activities carried out both in India and in Kenya, such as case studies, focus group discussions, capacities building activities and so on.

This introduction was then followed by detailed presentations of the Manifestos and the Guidelines. Prof. Haribabu Ejnavarzala of the University of Hyderabad, gave a presentation of the Indian Manifesto that gave the African participants interesting hints for comparing and analysing the differences and the commonalities.

Dr. Kevin Urama took the floor to introduce the African Manifesto, pointing out that this Manifesto "starts a new era of STI, as a platform that allows us to move forward". Prof. Abdulrazak intervened arguing for the need to engage the policy makers and the parliamentarians, because "we have to show the politicians how they can be able to transform the society" and concluded stating that "the days of transactions are over, we need to do transformation".

Dr. Daniele Mezzana, from LSC Italy, ended this first session with a showcase of the set of the Guidelines.

The second part of this session continued with a panel discussion involving some of the National Chapters representatives of ATPS. Dr. George Esegbey, ATPS, Ghana, launched the discussion addressing the SET-DEV partners and the public with the following questions:

- How to make more use of Science and Technology (S&T) in Africa?
- How to maximize benefits and minimize the risks?
- How to recognize the role of stakeholders and make them play a crucial role for S&T in Africa?

Dr. Anthony Ikeme, ATPS, USA, pointed out that first of all the gap between politicians and science has to be solved. Secondly, the so called "South-South (S-S) collaboration" is required and lastly he urged the need for true strategy to address the "diaspora" and harness their expertise as they are in the cutting edge of STI.



The discussion then shifted to the education issue and Rogier Mercy Rurii of the International Development Research Centre (IDRC) focused on the demand to “target secondary school students, curricula and teacher training colleges”. “The whole education system” he concluded “has to be changed”.



Following this panel, Mrs. Wendy Taylor, from Intermedia NCG, presented two case studies from two different institutions in Kenya (ICIPE and Egerton University) whose main purposes were to provide some guidance for structuring their research programmes in the areas of STI. In reference to the principles identified by SET-DEV, the case studies showed that there is a strong dependence on external funding sources that define the research priorities agenda. Mrs. Taylor ended highlighting other conclusions or “lessons learned” like the issue regarding the lack of links between research institutes, industry and policy-makers, the need for researchers to get consulted by politicians, the issue of the new technology always associated with some economic benefits, the “brain-drain” challenge and the gender inequalities problem.

Dr. Prakash Vinjamuri of Life-Health Reinforcement Group presented the case study on “Medical ethics: a case study of hysterectomy in Andhra Pradesh”. The study demonstrates how and why young women were pushed towards

unnecessary hysterectomy, affirming that this critical issue requires an immediate solution. “Women approaching for Medical ailment are being subjected to “Organ removal” instead of process based approach and they charge the patient”. It is urgent to implement regulations on medical ethics that allow searching for alternatives, to consult with the patients, to have informed consent and post operative follow-up. The case demonstrates “how marginalized women suffered and are suffering from this kind of practice of Science & Technology”. “This case,” he added, “had thrown up the gaps in medical practice”. Although the malpractice started from India, it is (now) spread globally and has to be fought all over to demonstrate “the abuse of technology and its impact on Health of the humanity”.

The morning session was concluded with a discussion forum, chaired by Prof. Michael Madukwe of ATPS Nigeria, focused on the African Manifesto and plans for its implementation. Dr.

Urama started the discussion stressing the importance to recognize “our knowledge systems” and the need of a common language. He continued with the list of the coordinated response actions which was immediately followed by few comments and recommendations from the participants concerning the responsibility to build capacities for journalists, to invest more in science communication and to develop projects in a regional way.

Prof. Bijker, from Maastricht University, went on





urging all of the recommendations that are listed in the African Manifesto to be transformed into strategies for the agenda. As for the first recommendation, "Reject knowledge dependence", the necessity for a sustainable funding to support STI was highlighted. A representative of ICIPE suggested that "we need to give some funding to research. People go abroad and get some knowledge that can't be applied in our context because we have not reached that level yet."

This was followed by the second recommendation dealing with encouraging "bottom-up innovation and democratic governance of STI in Africa for the African development". Prof. Bijker emphasised that there should be more knowledge sharing rather than transferring. "There is need to share knowledge across borders, national, continental, institutional border and disciplinary borders".

Concerning the third recommendation, "Encourage new forms of STI in Africa", SET-DEV partners and the public made some relevant suggestions such as looking at local resources and possibilities, or local forms of knowledge to find effective ways to solve the problems of the country. Prof. Madukwe stressed that "we should have policies that should give credits to the research that is creating real solutions to the problems of the country".

With the fourth recommendation the discussion panel moved to "new forms of STI monitoring and evaluation" issues. Dr. Ikeme considered the need for every ministry, every government to have a data gathering mechanism in place. "What is not measured cannot be accomplished. We need data that will enable us to track progress, to measure the output of what we are doing" so that "we shall know how to change course, or set goals or know whether the objective is being met". Another important point was

the need for the development of new models and schemes to give access to researchers and extend the possibilities of having publications.

The fifth recommendation calls to encourage "coordination and collaboration" and highlighted the need to sensitise and to raise awareness, whereas with the sixth and last encourage "full socialisation of STI in Africa". Dr. Alfonsi stated that "a dialogue with all policy makers is necessary but all stakeholders should be included in this dialogue. For the implementation of socialisation, the guidelines will provide a framework".

Lastly, Dr. Urama invited and urged all participants to think about more concrete ideas for these recommendations, to be able to channel them.

The third and final session, chaired by Dr. Urama, was dedicated to "Responses/Implementation" of the African Manifesto. He started by explaining the level of involvement that is required to be taken up on the biannual state of STI report. He mentioned that "the ATPS has embarked on developing the bi-annual state of STI, which will be feeding into the global science report, published by UNESCO every five years". "This is a crucial activity that will require expertise at the country level", he added.

Dr. Nicholas Ozor, from ATPS, detailed every phase of the contribution process for the report, from the nomination of experts and selection criteria to the content and implementation contribution. The biennial report "is to keep up to date information and data that could feed into the development of STI", stated Dr. Ozor. He concluded by saying that since "it's very difficult to have African data on STI, this report will help us to develop the require database. We need to have data".

Dr. Urama and Prof. Bijker ended the session mentioning respectively follow-up activities carried out in African countries (but also in the United States and in the UK) and the final meeting in Brussels that will be used to inform about the great commitment from all African countries to follow up and implement the African Manifesto.

**Research, Innovation and Development: the Social Fabric of Science.
The policy and ethical perspectives of a dialogue among India, Africa and Europe**

BRUSSELS, 3rd MAY 2011

The last seminar was held on the 3rd of May at the European Economic and Social Committee (EESC) in Brussels. The meeting, titled "Research, Innovation and Development: the Social Fabric of Science. The policy and ethical perspectives of a dialogue among India, Africa and Europe", was successfully celebrated with the attendance of high level speakers and representatives from the European Commission, the European Parliament, Brussels based worldwide Embassies and organizations specifically involved in Ethics and Development research.

The seminar was opened by Ms. Madi Sharma, representative of the European Economic and Social Committee. She pointed out that the development in India and Africa is a priority for two different aspects: from the development side and from the trade and entrepreneurship side. She added that "we need to look at consultation and dialogue" and what supports poverty alleviation and development: it is very important to do an impact assessment.

She finally encouraged all SET-DEV partners saying that "what you are doing here today is important for the EESC also" and "we can probably use the findings". She concluded saying that "everything you are doing within this project, for me is to be praised".

Divided into two sessions, the core of the first part of the morning, after a general introduction from the scientific coordinator of the project, Dr. Alfonso Alfonsi, from LCS, was devoted to the presentation of the SET-DEV project main concepts, impacts and results: the "African Manifesto for Science, Technology and Innovation", and the Pilot Programme developed in Africa; the "Knowledge Swaraj" or Indian Manifesto and the Pilot Programme carried out in India; the Guidelines "Technological responsibility. Guidelines for a shared governance of the processes of socialisation of scientific research and innovation, within an interconnected world".

Ms. Mwangi, ATPS researcher, stressed out that the African Manifesto "is a product of multilateral dialogue between various stakeholders, such as policy makers, private sectors, CSOs all around Africa and together with partners from EU and India". She remarked that the Manifesto has been a very consultative and participatory process enhancing mutual learning from different best practices and enabling the creation of a vision to capture the commonalties and appreciate the differences in the different countries and continents. She considered that the Manifesto is crucial, "because STI is really important for African development".

The Indian Manifesto was presented by Prof. Shambu Prasad, from CWS, who highlighted the Indian specific context due to the plurality of knowledge, traditional and modern, that con-



verge in the country. "We are talking about a combination of both tradition and modern system", insisted Prof. Prasad, and added that the three principles to build the Indian Manifesto are justice, sustainability and plurality. "Justice" as the democratisation of governance and cognitive justice important for knowledge democracy; "plurality" that is about recognizing multiple knowledge systems, different kind of experts; and "sustainability" in the long term (meaning universal access to food, health, education, reduction of vulnerability, a theory of non-violence).

After that, a presentation of the Indian Manifesto-

to's structure and the 5 cases studies were highlighted.

Concerning the presentation of the Guidelines, Dr. Daniele Mezzana, LCS consultant, defined the document as the result of a trilateral dialogue and cooperation between Africa, India and Europe. "The Guidelines offer a recommendation on how science, technology, and innovation can be better integrated into society and be more relevant to respond to society's needs", said Dr. Mezzana, and talking about the objectives he pointed out: raising awareness on the importance of the concept of socialisation of scientific and technological research (STR) for the progress of the local research systems; strengthening a collective responsibility for S&T research; increasing the capacity of several different actors involved in STR policies; and providing a practical guide on how to increase the socialisation of STR.

To conclude the first part of the morning, Mr. Francesco Fusaro, from Unit "Gender and Ethics", DG Research and Innovation, European Com-



mission, SET-DEV project officer, intervened and congratulated the SET-DEV partners for the work done since 2008 and the results achieved by the project. He emphasised some concepts pointed out during the presentations and especially from the presentation of the scientific coordinator, Dr. Alfonsi, such as the fact that "innovation has to be accepted by society", the importance of the "involvement of civil society organisations" that was stressed in both Manifestos and the need to foster "new ways of producing and circulating knowledge".

Dr. Alfonsi, focused indeed on the "dialogue" and the strong demand for a social dialogue and young governance about STI. "We see knowledge

as a common good and citizenship build around knowledge that would exercise a joint responsibility and civil governance". Mr. Fusaro closed adding that "one of the challenges is that of creating a responsible research in which the actors are responsible to each other". "This is the way of creating what is a social and ethical acceptable innovation".

The second session of the meeting was a round table discussion focused on the lessons learned from the project in the perspective of the Europe-Third countries scientific cooperation. Under the guidance of the chair, Prof. Wiebe Bijker, the partners and the participants discussed the project development after the end of it and future perspectives also in consideration of the next Framework Programme and the open consultation to the Green Paper "From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding."

Mr. Moretti, from the Permanent Representation of Italy in Brussels, launched the discussion with the message that it is fundamental to implement "a concrete dialogue with the third countries and this dialogue is a two ways communication". If "research activity should be developed for the benefit of civil society, we can benefit from the experience of this project by listening to the needs of those countries and orienting the priorities according to the market and the civil society".

Prof. Haribabu, from the University of Hyderabad, highlighted the importance of "collaboration" and an international and multicultural collaboration that is the strength and

the feature of SET-DEV project.

He added then: "no country or region in the world can achieve peace and prosperity in isolation", "no country can prosper without collaboration". The collaboration is always based on equality, understanding each other's strengths and bringing to a win-win situation. And this principle applies perfectly to the collaborative research in which social scientists should penetrate into S&T and establish an interface between science and society.

Dr. Alfonso Alfonsi, reflecting on the work executed in the project in preparation of the Manifestos, said that what we saw in SET-DEV was really a fruitful combination of, on the one



hand a community based research and, on the other hand a global scientific community research, the global knowledge society that are not in contradiction but in fruitful cooperation.

Among the participants, Dr. Maurizio Salvi, Member of the Bureau of European Policy Advisors (BEPA), highlighted the importance of the "notion of innovation with regards to the link with societal outputs for marketing purposes" that "is going to be materialized in the next FP", where innovation policy is part of the macro-economic strategy and globalisation processes.

He added that the notion of values and the no-

tion of ethical consideration and policy frame is a legal requirement of the EU, and "this has to impact in all domains, including the science, technology policy domains".

The audience participated largely in the discussion pointing out some of the results of the project and discussing about the implementation of those in the next framework.

To conclude, Prof. Wiebe Bijker thanked all attendees and the speakers and stressed the need to take into account the messages of SET-DEV project to improve the relationship between India, Africa and Europe.



TECHNOLOGICAL RESPONSIBILITY. Guidelines for a shared governance of the processes of socialisation of scientific research and innovation, within an interconnected world

The Guidelines of SET-DEV project on technological responsibility summarise the experience of all the activities carried out during the three years of SET-DEV and are based on intense three-way dialogue between its partner organisations in Africa, India and Europe, as well as many other national and regional participants. The full title of the document is: "Technological responsibility. Guidelines for a shared governance of the processes of socialisation of scientific research and innovation, within an interconnected world".

The Guidelines are intended to be a practical contribution about how we can promote effective collective responsibility in science and technology. In doing so, this text offers some information on the social fabric of science, and some suggestions on how scientific and technological research can better integrate into society and be more relevant to society's needs.

The Guidelines consist of eight chapters, referring to several areas of scientific and technological research (STR) socialisation, that are critical areas in which actors involved in STR "construct" the relations between science, technology and society. The areas are: scientific practice, scientific mediation, scientific communication, evaluation, innovation, governance, gender, substantive approaches. For each of these areas, several frames of responsibility are outlined to act as reference points for identifying problems and finding solutions concerning the relationship between science technology and society, e.g.: "contextualisation of research", or "quality of research" for the area of scientific practice, "dialogue among decision makers and researchers" for the area of scientific communication, "dialogue and participation in policy making" for the area of governance, "tackling the plurality of knowledge systems" for the area of "substantive approaches, etc..

Each frame of responsibility corresponds to a set of practical options (a sort of a "catalogue" of options, based on SET-DEV experience of study, dialogue, exchange, and practice) developed for all concerned actors to consider,

choose from and adapt to their own contexts. The frames of responsibility and practical options (even if formulated in reference to SET-DEV experiences in India and Africa) may have a general significance outside these contexts. In addition, to provide specific suggestions for Indian and Kenyan readers, both for each area of socialisation of STR and for considerations drawn by the European partners, some lessons learned were formulated and placed in the Appendix. A bibliography completes the document.



The main editor of the Guidelines is Dr. Daniele Mezzana (LSC), supported by an editorial board composed by Dr. Alfonso Alfonsi (LSC), Wiebe Bijker (Maastricht University), Haribabu Ejnavarzalala (University of Hyderabad), Kevin Urama (African Technology Policy Studies Network - ATPS), Wendy Taylor (Intermedia NCG), Shambu Prasad (Centre for World Solidarity and KICS). Other SET-DEV partners were actively involved in preparing, reviewing and validating the document.

The guidelines are downloadable at the address: www.set-dev.eu



SET-DEV partners would like to thank all the readers for their interest shown and invite everybody to keep an eye on our website for future updates. Of course, you are welcome to contact us for any question or additional information on our activities and outputs.

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