II.A. Results achieved during the period 20-12-2008 to 31-12-2009

Describe in no more than 2 pages the main results achieved, indicating the key scientific and technical outcomes of the Action compared to the international state-of-the art, and with an assessment of the results obtained compared to the objectives. Describe briefly:

- Progress with respect to the Action's work-plan, as well as potential scientific problems encountered.
- Efforts made and success achieved in involving early-stage researchers, in particular with respect to STSMs, networking activities, and Training Schools.
- Impact of European Neighbourhood Policy (ENP) and other non-COST participants' involvement.
- STSMs (in addition, justification should be provided if less than 4 STSMs were carried out during the year).
- Synergetic activities (e.g. other Actions and Domains, Framework Programme activities, ESF, EUREKA, etc.).

Additional documentation such as extended scientific reports, proceedings of workshops, seminars or conferences may be provided separately as an annex to the annual progress report, and should be referenced in the report.

II.A.1. Progress with respect to the Action's work-plan. Some scientific highlights and collaborations within the Action are summarised below:
WG1 is mainly concentrated on understanding the regulatory roles of two major classes of protein kinases (SnRKs and MAPK), the activities of which are differentially controlled by specific abiotic stress stimuli. **WG2** deals with the identification and functional analysis of signaling compounds directing gene expression under stress conditions. The topics developed in WG1 are closely related to the topics in WG2, and therefore a close collaboration between scientists of these two WGs, promoted during the first COST meeting (Matera, Italy), has been continued and several publications have been obtained. An example for this is the training supported through an STMS by a member of the group of **L. Szabados** in the laboratory of **C. Koncz**. Here a novel method for isolating low abundant proteins was used and resulted in the partial purification of the transcription factor CAI1. Like the contribution of **P. Rodriguez** (who has identified components interacting with the abscisic acid, ABA, receptor), the Szabados/Koncz collaboration demonstrates that the fine tuning of stress response pathways lies in assembly of complexes and a homeostasis of complex components. These are the first steps towards understanding the complex stress network and in the end to manipulate stress reactions towards a more profitable agriculture. Further objective of these WGs are to use the efforts of individual groups to determine the temporal sequence of the molecular events in responses to stress. This should eventually lead to building up molecular networks which can be utilized in a more general system biology approach. Some other examples of relevant collaborative work are listed below:

- Genetic analysis of functional redundancy of BRM ATPase and ATSWI3C subunits of Arabidopsis SWI/SNF chromatin remodelling complexes (collaboration between A. Jerzmanowski and C. Koncz)
- Plant phospholipid signalling (collaboration between T. Munnik, C. Testerink and D. Bartels)

WG3 is mainly concentrated to dissect stress-associated signalling cascades that

control the accumulation of osmoprotectans and other protective compounds. During 2009, members of WG3 have focused their studies on signalling pathways that induce changes in metabolite profiles including osmolyte accumulation during abiotic stress imposition. All the involved groups have used molecular genetics, physiological and metabolomic approaches along with the development of systems biology strategies relying on mathematical models and bioinformatic analyses. Much scientific collaboration has been established among the groups during the reporting period using STSM fellowships and other sources. Examples of relevant collaborative work in the context of INPAS are listed below:

- Development of non-invasive methods for screening abiotic stress tolerance in plants (collaborations of K. Mishra with A. Heyer and K. Mishra with R. Iannacone)
- Regulation of proline metabolism in Arabidopsis and Thellungiella in response to abiotic stress (collaboration between A. Savouré and A. Bouchereau)
- Identification of stress-associated regulatory factors that control ABA signalling and proline accumulation (collaboration between L. Szabados and C. Koncz)
- Characterization of genetic determinants of salt tolerance in extremophiles such as Thellungiella halophila (collaboration between L. Szabados and A. Savouré)

WG4 aims at integrated molecular analysis of the polyamine (PA) metabolic pathway in response to abiotic stress. Specific objectives of this WG include: (i) identification of molecular and metabolic markers for polyamine (PA)-mediated abiotic responses (ii) assessment of genetic and metabolic variability in various ecotypes and RILs of Arabidopsis regarding PA-responses to abiotic stress (iii) characterization of Arabidopsis PA metabolic loss- and gain-of-function mutants in response to abiotic stress, (iv) global transcriptome and metabolome analysis of loss- and gain-of-function mutants affected in PA metabolism in response to abiotic stress, and (v) physiological and biochemical characterization of PA metabolism in relevant crop plants with improved adaptation to abiotic stress. All the involved groups are working individually or in collaboration in the above mentioned topics. Several scientific collaborations have been established through STMS and/or other sources. Some examples of relevant collaborative work are listed below:

- Genetics of natural variation for polyamine content. QTL analyses for putrescine, spermidine and spermine levels (collaboration between R. Alcazar, M. Reymond and AF Tiburcio)
- Regulatory role of putrescine in cold stress tolerance (collaboration between AF Tiburcio, J Salinas, C. Koncz and P. Carrasco groups)
- Characterization of polyamine and diamine oxidases (collaboration between R. Angelini and KA Roubelakis-Angelakis)

In our **publications** (see Annex I) it can be seen a complete picture of scientific work.

II.A.2. STMS, COST and non-COST participation, and synergetic activities

STMS: From June 2009 to December 2009, seven STMS were approved and four were already completed. The scientific level of STSM proposals was very good and these collaborations show the way to future fruitful cooperation between different groups participating in this COST action. All grantees were young scientists and most visits lasted roughly 3-4 weeks. A special STSM section was designed on the INPAS *webpage* (www.cost-inpas.com) by Rina Iannacone (STMS coordinator) containing some pictures and short reports on the STSM outcome (see Annex II).

COST and non-COST participation: The action started with 32 participants from 19 countries. **Currently, there are 70 participants from 35 countries (29 COST; 6 non-COST)**. During this Action period, several researchers from different COST and non-COST countries have shown interest to join the Action and may become partners in 2010, namely researchers from Iceland, Romania, Serbia, Latvia and Ireland. In

addition, John P. Moore and Melané A. Vivier who are researchers from the Institute for Wine Biotechnology of Stellenbosch University in South Africa have recently applied for becoming members of the COST action. Confirmed new partners are Dr. Kristina Gruden from National Institute of Biology in Ljubljana (Slovenia) and Professor Anthony Koutoulis from University of Tasmania (Australia). The fact that Australia has joined the action and that the process for South Africa participation is undergoing will certainly contribute for a full internationalization of the Action. The increase in INPAS participation has been mainly due to the efforts made by Dr. Ana M. Fortes (new participation coordinator) and to the dissemination of INPAS through Satellite meetings organized in parallel to important scientific events (see below).

Synergetic activities: A satellite SC meeting was celebrated in parallel to the **FEBS Workshop**: "Adaptation Potential in Plants". Vienna 19-21 March 2009 (http://www.gmi.oeaw.ac.at/en/other-sites/febs/home/). In this Workshop INPAS aims and activities were presented by the action chair (AF. Tiburcio) after his scientific presentation (see Annexes III and IV). INPAS aims and activities were also disseminated by Dr. Antonio F. Tiburcio at the 4th Meeting of "Red de Estrés Abiótico de las Plantas" (REAP; "**Spanish Network in Plant Abiotic Stress"**) on 26 of September de 2009 at the IBMCP-Universidad Politécnica de Valencia (see Annex V for programme). A second satellite SC meeting was celebrated in parallel to the **Plant GEM Meeting** (http://www.plant-gem.org/pages/home.php) on 7th-10th October 2009 in Lisbon (see Annexes VI and VII). Within the frame of FP6, a **Marie-Curie training network** was established to support Ph.D. programs in plant stress biology. The ongoing **ADONIS**: A doctoral training network in Integrative Studies of Plant Stress Biology (FP6-020232-2) program is currently training 16 young European scientists in plant stress biology. The project is co-ordinated by Dorothea Bartels and 3 other members of our COST Action. This broadens the training aspect of both the ADONIS project and the COST Action. The students in the training project have the opportunity to present their work in the COST meetings as well as to participate in STMS and eventually in Training Schools.

II.B. Dissemination of results

- *Action related Publications and Reports (list)*
- *Conferences, Workshops and Training Schools (list and programme)*
- *Web site (description)*
- *Scientific and Technical Cooperation*

List briefly cooperation and contacts established with scientific institutions, with other research programmes (especially in the EU Framework programme), and with potential users.

- *Transfer of results*

List briefly cooperation and contacts established with the Commission, with normalisation and standardisation bodies, with industry and operators.
Provide the dissemination plan with regard to end users.

- *Contacts in the ERA*

List the contacts, if any, with other activities in the Community R&D programmes, EUREKA, the European Science Foundation and other European cooperative research frameworks etc.

For details, see chapter 9 - Dissemination of results

Action related publications

Publications related to the COST Action include: (i) the **book of abstracts** of the second Science Workshop of INPAS organized in Tartu (Estonia) between 14 to 17 May 2009 http://www.ut.ee/INPAS/ (see book of abstracts in Annex VIII) and (ii) a proposal for a **special issue in Plant Science** containing articles and reviews of INPAS participants with emphasis to collaborative work (see Annex IX for preliminary topics and titles). Recently, this proposed issue has been approved by the Editorial Board of Plant Science (Editor-in-Chief: Eduardo Blumwald).
A list of recent **Journal publications** made by the Action participants is included in Annex I. A total number of around 110 papers (also including submitted or under revision) have been published during this year period (2009). It should be highlighted that: (i) some of these articles (around 13%) come from the collaboration between members of the Action (the number has increased in comparison to 2008 by a 3%) and (ii) around 30% of them are published in top journals. For example:

- Nature (2)
- Science (1)
- Trends in Plant Sciences (2)
- Trends in Plant Biotechnology (1)
- Plant Cell (2)
- PlosOne (1)
- Plant Journal (3)
- Plant Physiology (4)
- Planta (3)
- Plant Molecular Biology (1)

Second Scientific Workshop of INPAS

In the FA0605 Management Committee meeting in Matera, Italy, April 12, 2008 (place of 1st INPAS Workshop) it was decided that the Action's 2009 meeting will be organized by Hannes Kollist and Ülo Niinemets in Tartu, Estonia from 14 to 17 May 2009. SC meeting (Barcelona 16-17 October 2008) was organized for making budgetary and scientific decisions for the Tartu's meeting. The SC members came to a decision that the main aim was to organize high quality scientific meeting which would attract also a high number of participants not yet connected with FA0605 to enhance the visibility of the Action. To gain this aim it was decided to invite more internationally well known speakers and to give broader and attractive title for the meeting. The meeting was named "**Plant Abiotic Stress – from signalling to development**" to cover the key topics of the Action. Invited speakers who accepted the invitation were Tamas Dalmay (Norwich, UK), Seth Davis (MPI, Cologne, Germany), John Doonan (JIC, Norwich, UK), Simon Gilroy, (Madison, USA), Rainer Hedrich (Würzburg, Germany), Julian Schroeder (La Jolla, USA), Montserrat Pages (Barcelona, Spain), Matthieu Reymond (MPI, Cologne, Germany), Oscar Ruiz (Buenos Aires, Argentina), Jian-Kang Zhu (Riverside, USA). Julian Schroeder cancelled his participation due to teaching duties in the fall 2008 and asked to replace him with Maria Israelsson Nordström (Stockholm, Sweden). Oscar Ruiz cancelled his participation one month before the meeting due to personal reasons and was replaced by Alain Bouchereau (Rennes, France). Jian-Kang Zhu cancelled his participation due to illness one week before the meeting and was replaced by Ülo Niinemets (Tartu, Estonia). To encourage participation of young researchers the SC decided to open a call for fellowships (up to 10). The main criteria for the successful candidate were determined to be the scientific

quality of his/her research and active participation (willingness to give oral presentation) in the meeting. Electronic registration and abstract submission was opened in the meeting website (www.ut.ee/INPAS) on 18th of December 2008. At the same time, Invitation Poster (Annex X) of the meeting was disseminated among 12000 plant biologist all over the world. Altogether 33 fellowship applications were received. Ten fellowships on the basis of their scientific quality were selected in the SC meeting in Vienna 18th of March, 2009. A total number of 123 abstracts were sent by the registration deadline. All abstracts were evaluated by the SC members and 20 abstracts were selected for oral presentations in SC Vienna meeting. Conference programme was divided into four sessions taking place during two days. To follow the spirit in the title – from signaling to development – first session contained talks dealing with Abiotic Stress Signaling, second session with Genetics and Natural Variation, third with Physiology, biochemistry & metabolic profiles, and the last session covered presentations about Abiotic Stress and Development.
In addition to oral sessions, 94 posters were presented in the conference (see Annex VIII for book of abstracts). Posters were discussed during the lunch and coffee breaks and during the official Poster Session with buffet in the evening of 15th of May. Participation to the workshop was very wide and 187 scientists from 28 countries were present. An overview of participants according to their country is outlined in Annex VII. To cover part of the organizing costs, local organizers Hannes Kollist and Ülo Niinemets applied for a grant from the Estonian Ministry of Education and Science. The application was successful and 5000 EUR grant was awarded. In addition, to raise more funds for the meeting a special call was made among the international companies manufacturing plant science equipment. As a result the following companies, CLF Plant Climatics (Germany), Conviron (USA), Licor (USA), Regent Instruments (Canada), Solis Biodyne (Estonia), Quantum (Estonia) and Walz Mess- und Regeltechnik (Germany) decided to support the conference. After short welcome by the local organizer Hannes Kollist, the conference was opened by the chair of FA0605 Antonio F. Tiburcio. The chair outlined the necessity of collaboration among scientists from different countries in the plant abiotic stress tolerance field. He also illustrated the importance of collaboration between the scientists and the breeding companies which has been taking place in the frames of COST Action FA0605. The overall scientific level of presentations was excellent. There was time for discussions at the end of each session and many interactions among researchers were established. Although the conference schedule was very intensive, the participants had the chance to have a sightseeing tour in the old town of Tartu and closing dinner in a medieval restaurant Gunpowder Cellar. The **workshop attracted also attention of the Estonian media**. News clip announcing the conference and plant abiotic stress as an important issue was broadcasted in the prime time news of the **Estonian National Television** (http://etv.err.ee/arhiiv.php?id=93581 at 14 minutes 12 seconds). Conference as COST initiative as well as plant abiotic stress as an important topic was also discussed in the **local newspapers** and **radio**.

Organization of the 3rd Scientific Workshop of INPAS

In the FA0605 Management Committee meeting in Tartu (Estonia), on 17 May 2009, it was decided that the Action's 2010 meeting will be organized by Pedro Carrasco in Valencia, Spain.

Steering Committee (SC) for making budgetary and scientific decisions for the Valencia meeting was formed in September 2009. SC included Action's Working Group's leader's (WG1: Laszlo Bogre, WG2: Dorothea Bartels, WG3: Aviah Zilberstein and

Laszlo Szabados, WG4: Pedro Carrasco), organizer of the Action 2nd meeting in Tartu (Hannes Kollist), STMS coordinator (Rina Iannacone), website coordinator (Bernd Wollenweber), new countries coordinator (Ana M. Fortes), vice-chair (Csaba Koncz) and the chair of the Action (Antonio F. Tiburcio). SC meeting (held in Lisbon on 6 October 2009) for making budgetary and scientific decisions for the Valencia meeting, the provisional program and names of invited speakers to be contacted was established. It was also decided to invite some speakers from private companies in order to facilitate the knowledge transfer from academia to agricultural industry. Accordingly, the meeting was named **"Plant Abiotic Stress, from Signalling to Crop improvement"**. The local organizer (P. Carrasco) proposed to celebrate the meeting in the "Jardin Botanico" Valencia from 22nd to 24th April 2010. Invited speakers who have accepted the invitation are: Anna Amtmann (University of Glasgow, UK), Eduardo Blunwald (UC Davis, USA), Anjali Iyer-Pascuzzi (Duke University, USA), Erwin Grill, Technical University of München, Germany), Jaakko Kagasjärvi (University of Helsinki, Finland), Joachim Kopka (MPI, Postdam-Golm, Germany), Matthew Hannah (Bayer BioScience, Gent, Belgium), Jonathan Phillips (Monsanto, USA) and Pedro L. Rodríguez (IBMCP-CSIC, Valencia, Spain). To encourage participation of young researchers the SC decided to open a call for fellowships. The main criteria for the successful candidate were determined to be the scientific quality of his/her research and active participation (willingness to give oral presentation) in the meeting. Electronic registration and abstract submission has recently been opened in the meeting website (http://www.uv.es/inpas/index.htm).

INPAS Website

The website of the COST action FA0605 was established in 2008, as an interactive forum of the action, where members themselves can update news, science and publications. The website (http://cost-inpas.org/) is coordinated by Bernd Wollenweber and has an increasing interest. **Since 2008, a total of 6000 visitors** (about 4000 unique visitors) have visited the site and the statistics tell us that they visit on average 5 pages of the site. 60% of the visitors come from search engines, 20% from referring sites and 20% from direct visits. **Most of the visitors come from overseas**, with the USA, India, China dominating, followed by EU countries leaded by Spain (The head of the COST Action). The main keywords from the search-engines include plant abiotic stress, COST, as well as the names of individual members of the action. The focus of interest is on the scientific program of the action, followed by the list of publications, thus highlighting the relevance of the action and also indicating that the website is successfully being used to disseminate the research for a broader audience (see more information on the website in Annex XI).

Contacts with EU Framework and other international programmes

A widely accepted deficiency in European research is the lack of opportunity for early stage researchers to develop independent careers and to establish their first research group under their own responsibility. This is a structural problem that leads to a dramatic waste of research talent in Europe. It limits or delays the emergence of the next generation of researchers, who bring new ideas to the European Research Area (ERA). **Marie Curie Research Training Networks** (RTN) (http://cordis.europa.eu/mariecurie-actions/rtn/home.html) provide the means for research teams of recognised international stature to link up, in the context of a well-defined collaborative research project, in order to formulate and implement a structured training programme for researchers in a particular field of research. Networks provide a

cohesive, but flexible framework for the training and professional development of researchers, especially in the early stages of their research career. As earlier indicated, one RTN has been established by 4 participants of INPAS to support Ph.D. programs in plant stress biology. The ongoing **ADONIS: A doctoral training network in Integrative Studies of Plant Stress Biology** (FP6-020232-2) program train 16 young European scientist in plant stress biology. This network aims to dissect the molecular and physiological mechanisms in plant stress adaptation, in particular, to cold, drought, heat and salinity. The ambition of ADONIS is to provide in-depth understanding of the molecular events starting from perception of the stress signal, the regulation of the signal transduction events that lead to appropriate physiological responses (gene expression, protein synthesis, nuclear export-import processes, RNA metabolism and proteolysis). The primary model is Arabidopsis thaliana and results will be validated in other crop species where applicable. This research topic is also timely in the context of the current environmental problems and that abiotic stress is the major limiting factor in crop productivity (http://www.adonis.science.ru.nl/.). It is clear that these trained 16 young European scientists are excellent candidates for participating in most of the scientific and formative activities organized by INPAS (i.e. STMS, Training Schools and so on).
Since the COST Action does not provide direct financial support for research, various participants of INPAS have contributed in the **preparation several international proposals**:

Applications financed:

- ERANetPG "PathoNet" from October 2009 (other partners: Cyril Zipfel (Norwich, UK), Wolfram Weckwerth (Vienna, AT), Alois Schweighofer (associated partner, FP7 Marie Curie fellow, Potsdam, G), Dierk Scheel and Justin Lee (Halle, G). Coordinator: **Irute Meskiene** (MC member of INPAS).

Applications non-financed:

- *ESF-EUROCORES* Program on environmental stress responses on higher plants: Accelerated Adaptation to Long-Term Heavy Metal Stress in natural Populations of Capsella sp. (HM-CAPS)
- *PLANT-KBBE 2009*: Molecular studies on cork oak for improved cork quality and production (CORKOMICS)
- *PLANT-KBBE 2009*: Understanding Grape aroma determinants (GRADE)
- *PLANT-KBBE 2009*: Stabilization of crop yield and quality by exploiting natural variations in plant responses to limiting environments (STRIDE)
- *ERC Advanced Grant:* Multi-resistant plants to biotic and abiotic stresses through manipulation of polyamine catabolic pathways

Application to be resolved:

- *BSF (Binational Science Foundation):* Tolerant Poplar Trees for Sustainable Biofuel Production

Cooperation with industry

Regarding cooperation and contact with Industry, we already have from the beginning the participation in INPAS of Rina Ianaconne from the Company **"Metapontum-Agrobios"** (Metaponto, Italy). Collaboration and some agreements for exploitation of

results have already been established with this Company in the context of INPAS.

In order to improve cooperation and knowledge transfer from academia to agricultural industry Matthew Hannah (**Bayer BioScience**, Gent, Belgium) and Jonathan Phillips (**Monsanto**, USA) have been selected as invited speakers in the 3rd INPAS Workshop to be held in Valencia (see Meeting section).

Several **patent applications** have been made by INPAS members:

Narendra Tuteja N. ICGEB, New Delhi, India.
Overexpression of pea DNA helicase PDH47 in tobacco, rice and chickpea confers high salinity tolerance without affecting the yield.
Application number: 1340/del/2005; 25/05/2005. Indian patent.

Carrasco P; Ferrando A; Tiburcio AF (**2 INPAS groups**: Universidad de Valencia and Universidad de Barcelona)
Modulation of growth and development of seeds by inhibition of polyamine catabolism.
Application number: PCT WO2009/074700 A1 (2007). Spanish patent.

Altabella, T; Tiburcio, AF; Ferrando, A (**2 INPAS groups**: Universidad de Valencia and Universidad de Barcelona)
Plants resistant to cold stress and method of production.
Application number: PCT/ES2008/02145 (2007). Spanish patent.

Wang, W., Pelah, D., Alegrand, T., Pouny, Y., Marton, I., Wolf, A., Shoseyov, O., Altman, A.
Denaturant stable and/or protease resistant, chaperone-like oligomeric proteins, polynucleotides encoding same, their uses and methods of increasing a specific activity thereof.
Application number: USA Patent 7,253,341 (August 7, 2007).

Wolf, A., Pouny, Y., Marton, I., Dgany, O., Altman, A., Shoseyov, O.
Sp1 Polypeptides, Modified Sp1 Polypeptides and Uses Thereof
Application number: WO/2007/007325

Szabados L, Koncz C, Ábrahám E, Papdi C, Joseph MP
Controlled cDNA Overexpression System in Arabidopsis
Application number: P0800351, 2008.05.30. Hungarian patent.

Pais MS, Sampaio PNS, Soares RIG, Coelho MC, Santos JMS, Cruz P, Cruz H
Pharmaceutical compositions containing the enzyme
Cyprosin, an aspartic peptidase from Cynara cardunculus and its inclusion in anti-tumour formulations. PCT requested.

This **will ensure potential exploitation of obtained results** in collaboration with private companies.

II.C. Self evaluation

Indicate in no more than 1 page what, in the opinion of the MC, were the main successes, drawbacks (if any) and the key difficulties encountered (if any).

Most of the **scientific and organization activities** (see Annex XII) planned for the second year of INPAS **has been successfully accomplished**.

Main Successes include:

1) The **world-wide interest in the Action and the success to attract new partners** (see Section II.A.2). The Action started with 32 participants from 19 countries. Currently, there are 70 participants from 35 countries (29 COST; 6 non-COST)
2) **The scientific objectives original proposed for this second year of the Action have been successfully achieved**. As indicated above, the number of participants has significantly increased, so the scientific task force of the Action is much bigger than it was initially expected.
3) **The amount and excellence of the publications of INPAS members**. Around 110 papers have been published: 13 % resulting from the collaboration between members of the Action, and 30% of them are published in top journals.
4) **A proposal of a special issue in Plant Science** containing articles and reviews of INPAS participants has recently been approved by the Editorial Board of Plant Science (Editor-in-Chief: Eduardo Blumwald).
5) The **training of young European scientists** (ADONIS program parallel to INPAS) who are excellent candidates for participating in most of the scientific and formative activities organized by INPAS (i.e. STMS, Training Schools and so on).
6) **The success of INPAS dissemination** by means of SC satellite meetings organized in parallel to important scientific events (FEBS Workshop in Vienna, REAP meeting in Valencia and Plant GEM meeting in Lisbon). It is obvious that this strategic dissemination plan has significantly contributed to increase the number of participants in the Action.
7) The world-wide interest in the Action is also reflected by the number of **INPAS website visits**: since 2008, a total of 6000 visitors, most of them coming from overseas, with USA, India and China dominating, followed by EU countries leaded by Spain.
8) The success of the second Science Workshop of INPAS (organized by Hannes Kollist, and Ülo Niinemets in Tartu, Estonia). The first Workshop in Matera (Italy) was attended by 70 scientists from 23 countries, whereas 187 scientists from 28 countries participated in the Tartu's Meeting. The Conference as COST initiative as well as plant abiotic stress as an important topic was announced and discussed in the **Estonian National Television, local newspapers and radio.**

During this second year of the Action, the chair has encountered some **difficulties** to organize such a big Action taking into account the lack of administrative support. However, it should be pointed out that most of the problems have been sorted out due to the constant support and collaboration of Ioanna Stavridou (Scientific Officer of the Action).