

Appendix 1

SIXTH FRAMEWORK PROGRAMME PRIORITY [1.1.6.3] [GLOBAL CHANGE AND ECOSYSTEMS]



Contract for:

SPECIFIC SUPPORT ACTION

Annex I - “Description of Work”

Project acronym: KASSA

Project full title: Knowledge Assessment and Sharing on Sustainable Agriculture

Proposal/Contract no.: 505582

Related to other Contract no.:

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1. Project summary

Conventional agriculture covers about half of the agricultural land of the EU countries; its negative impacts on the environment and on the basic natural resources are recognised. Growing concerns of society related to environmental deterioration such as soil erosion, CO₂ emission, water and food contamination, livestock epidemics, etc. make it necessary to explore new ways of improving the sustainability of present farming systems.

Alternative agricultural practices, technologies and approaches to support sustainable agriculture were researched, developed, tested and implemented during the second half of the 20th century in Europe and above all in North and South America and Australia; they concern several million hectares. Learning from the results of this experience and research and sharing lessons will undoubtedly contribute to the defining of pathways and tools that can orient European policy on the development of sustainable agriculture.

The KASSA proposal is aimed at building up a comprehensive knowledge base on sustainable agricultural practices, approaches and systems in support of European stakeholders: farmers and professionals, researchers and policymakers at local, regional, national, European and global levels.

KASSA involves a critical mass of skilled partners divided between four platforms: Europe, the Mediterranean, Asia and Latin America. It will be achieved through successive work sequences starting with a comprehensive inventory of existing results followed by a progressive refinement of the findings, alternating critical analysis and the sharing of the results of each platform.

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

The sustainability of agriculture is emerging as one of the most relevant and global issues along with environmental questions. Agriculture must take up the challenge of sustainability, i.e. must guarantee economic and social viability, food security and safety while conserving and even improving local and global basic resources and the environment. It is going to be one of the major post Green Revolution challenges world-wide while many parts of the world, including Europe, are experiencing water and soil degradation or even scarcity^[1]. It concerns crop and livestock farmers, as well as researchers and policymakers. It is clear that the increases in agricultural production required in the future are expected to result mainly from better use of already-exploited agricultural and grass lands^[2]. Awareness of the need to change conventional¹ agricultural practices^[3] is increasing all over the world as the negative impact of soil tillage on farm productivity and sustainability, as well as on environmental processes, is increasingly recognized and documented in both the developed and developing countries^{[2][4]}.

In particular during the second half of the 20th century, much research as well as on farm tests and extension operations was conducted to develop alternative agricultural practices, technologies and approaches in order to build up sustainable agriculture. Most of these initiatives and investigations were in North and South America and Australia where conservation agriculture covers over a million hectares^{[2][3][4][5][6][7]}. Many scientific research papers already confirm its positive on-farm and off-farm economic, social and environmental effects and much scientific research is currently in progress throughout the world in order to refine agro-ecological systems by improving their resilience, profitability and dissemination conditions².

¹ Traditional plough-based agriculture.

² See:

- Special issue *Soil & Tillage Research*, Volume 66, 2002 following the 15th meeting of the International Soil Tillage Research Organisation held in Fort Worth, Texas, USA in 2000;
- Proceedings of the 1st World Congress on Conservation Agriculture, Volume I & II. Garcia-Torres L., Benites J., and Martinez-Vilela A. Eds, Ecaf and FAO 2001;
- Extended Summary and Lectures of the 2nd World Congress on Conservation Agriculture, Iguassu Falls, Parana – Brazil August 11-15, 2003. Volume I & II + CDRom;
- <http://www.ecaf.org/>
- <http://www.rolf-derpsch.org/>
- <http://agroecologie.cirad.fr/>

In spite of these trends, conventional agriculture is still dominant in the EU countries where agricultural land covers about half of the territory. In numerous situations, negative impacts on the environment resulting from current European farming practices are recognized and some degradation forms quantified^[9], ECAF³. In recent decades, certain measures taken in the framework of the CAP or national policies tentatively contributed to tackling these environmental degradation issues. Shifting European agriculture towards more sustainability may lead to a drastic reduction or even a reversal of the current trends. This task is likely to be one of the major priorities on the policy agenda of the EU and member states.

Agro-ecological systems and technologies are still poorly adopted in Europe. A recent cross analysis of the attitude of farmers and experts in 6 EU member states and Switzerland^[10] towards no-tillage systems emphasized an existing contradiction between research results and the opinion of experts and farmers. It clearly showed the lack of knowledge of EU farmers and experts compared with US farmers and experts participating in the study.

The overall objective of KASSA is to build up a comprehensive knowledge base assembling international experience on sustainable agriculture and emphasising pathways, conditions and challenges to be considered by European stakeholders (farmers, researchers and policymakers) in order to improve agricultural sustainability in Europe. KASSA will make it possible to learn from past and ongoing research activities and technology implementation to identify gaps, scope for the collaboration of potential stakeholders and the major social, cultural, technical and economic issues. This will lead to bringing to the fore the major research questions to be addressed, and the practical learning and capacity building conditions to support agricultural sustainability strengthening in Europe and Southern countries.

KASSA will be achieved through an inventory and analysis of experience and results on sustainable agricultures, the synthesis and sharing of lessons learned in Europe and Southern countries and gap analysis and fill-in. KASSA will be built on 3 successive tasks each followed by a validation meeting:

- 1- Comprehensive inventory, assessment and critical analysis of existing knowledge on sustainable agriculture;
- 2- Learning from local/regional past and ongoing experience;
- 3- Refining findings.

An external panel of experts will contribute to the critical analysis and validation of KASSA results before their final delivery. The prospects for sustainable agriculture in Europe will be addressed at the time of the closing international conference. KASSA results and findings, recommendations and the major future research actions will be delivered at that time.

³ European Conservation Agriculture Forum: www.ecaf.org

3. Participants list

List of Participants

Partic. Role*	Parti c. No.	Participant name	Participant organisation name	Participant organisation short name	Country	Date enter project	Date exit project
CO	1	Francis Forest	Centre de Coopération Internationale en Recherche Agronomique pour le Développement	CIRAD	France	1	18
CR/PC	2	Stéphane de Tourdonnet	Institut National de la Recherche Agronomique	INRA	France	1	18
CR	5	Eric Van de Putte	Fondation Nationale pour une Agriculture de Conservation des Sols	FNACS	France	7	18
CR	6*	Jakob Magid	Den kongelige Veterinær- og Landbohøjskole	KVL	Denmark	1	18
CR	7*	Kirsten Thinggaard	Frøpatologisk Institut for Udviklingslandene	FIU	Denmark	1	18
CR	9	Rolf-Alexander Duering	Justus-Liebig-Universitaet Giessen	JLU	Germany	1	18
CR	10	Monika Frielinghaus	Leibniz - Zentrum für Agrarlandschafts- und Landnutzungsforschung Müncheberg	ZALF e.V.	Germany	1	18
CR	11	Jan Netland	Norsk institutt for planteforskning	NCRI	Norway	1	18
CR	12	Peter Barz	Environmental Network Limited	ENL	United Kingdom	7	18
CR	13	Raimo Kõlli	Eesti Põllumajandusülikool	EAU	Estonia	1	18
CR	14	Jaromir Kubat	Výzkumný ústav rostlinné výroby	VURV	Czech Republic	1	18
CR	15	Vitali Medvedev	National Scientific Centre -Institute for Soil Science and Agrochemistry Research	NSC ISSAR	Ukraine	1	18
CR/PC	16	José Luis Arrúe	Consejo Superior de Investigaciones Cinetificas	CSIC	Spain	1	18
CR	17	Carlos Cantero-Martinez	Universitat de Lleida	UdL	Spain	1	18
CR	18	Aurora Sombrero Sacristán	Instituto Tecnológico Agrario de Castilla y Leon	ITA	Spain	1	18
CR	19	José Luis Tenorio	Instituto Nacional de Investigacion y Tecnologia Agraria y Alimentaria	INIA	Spain	1	18
CR	20	Jose Jesus Perez de Ciriza	Instituto Tecnico y de Gestion Agricole S.A.	ITGA	Spain	1	18
CR	21	Rachid Mrabet	Institut National de la Recherche Agronomique	INRA	Morocco	1	18
CR	22	Alessandro Cardarelli	Centro Internazionale Crocevia	CIC	Italy	1	18

CR	23	Victor Kavvadias	National Agricultural Research Foundation	N.AG.RE.F	Greece	1	18
CR/PC	24**	Raj Gupta	Centro Internacional de Mejoramiento de Maiz y Trigo	CIMMYT - RWC	Mexico	1	18
CR	27	Inder Pal Abrol	Centre for Advancement of Sustainable Agriculture	CASA	India	1	18
CR	28	Ha Dinh Tuan	Vietnam Agricultural Science Institute	VASI	Vietnam	1	18
CR/PC	29	Maria de Fatima Dos Santos Ribeiro	Instituto Agronomico do Parana	IAPAR	Brasil	1	18
CR	30	Rog�ero Ferreira	Funda��o de Apoio ao Ensino, Pesquisa e Extens��o	FAEPE	Brasil	1	18
CR	31	Huberto Jos�� Kliemann	Universidade Federal de Goi��s	UFG	Brasil	1	18
CR/PC	32	Jos�� Eloir Denardin	Embrapa-Centro Nacional de Pesquisa de Trigo	EMBRAPA TRIGO	Brasil	1	18
CR	33	Jaime Diego Fernando Montenegro Ernst	Asociacion de Productores de Oleaginosas y Trigo	ANAPO	Bolivia	1	18
CR	34**	Patrick Wall	Centro Internacional de Mejoramiento de Maiz y Trigo	CIMMYT INT.	Mexico	1	13
CR	35	Roberto Atilio Peiretti	Asociaci��n Argentina de Productores en Siembra Directa	AAPRESID	Argentina	1	18

CO = Coordinator of KASSA

CR/PC = Platform Contractor

*- Partners 6 and 7 are represented by the same legal entity: KVL.

** - Partners 24 and 34 are represented by the same legal entity: CIMMYT INT.

4. Relevance to the objectives of the Global Change and Ecosystems Sub-Priority

Substantial terminology has been used to refer to alternative agricultural practices, technologies and approaches depending on the understanding of the concept from one region to another and on its evolution: *Minimum Tillage (MT)*, *Low Tillage*, *Reduced Tillage (RT)*, *No Tillage (NT)*, *Zero-Tillage (ZT)*, *Conservation Tillage*, *Crop Residue Management (CRM)*, *Direct Planting in Straw*, *Permanent Direct Seeding*, *Direct sowing Mulch-based Conservation agriculture (DMC)*, *Conservation Agriculture*, *No-Till/Conservation Agriculture (NT/CA)*, *Agroforestry*, *Ley Farming*, *Organic Agriculture (OA)*, *Organic Farming*, *Ecological Agriculture*, *Biological Agriculture*, *Integrated Pest Management (IPM)*, *Integrated Plant Nutrient Systems (IPNS)*, *Sustainable Land Management (SLM)* and *Better Land Husbandry (BLH)*...^{[2][3][4][5][6][7][8]}. It is obvious that many of these concepts refer to the same technical practices and precise definitions are needed⁴ to help to ensure shared understanding by research scientists, experts, farmers and policymakers; this may help their dissemination^[3].

In the perspective of "World agriculture: towards 2015/2030"^[4], IPM, IPNS, NT/CA and OA are seen as complementary elements that could contribute to making agriculture more sustainable. Agricultural biotechnology is considered as a possible large potential contributor to productivity gains and quality improvements, but there are also numerous risks and uncertainties associated with this new technology that have given rise to a host of concerns and questions. In a World Bank publication^[2], No-Till farming is seen as a component of SLM and BLH approaches aiming at sustainable rural development.

Available data (Table 1) show that NT, OA and GM crops (GMOs) have been grown on several million hectares during the last decade, mainly in North and South America and Australia (Table 1). Figures show that about 84% of NT areas are in America (36.7% in North America, 47.5% in Latin America), 12.5% in Australia and only 1.2% in Europe. The most significant OA areas are in Australia (46%), Argentina (14%) and Italy (5%) while the OA area represents about 22% of the total in the whole of geographical Europe⁵. 96% of GM crop areas are in the Americas: 68% in the USA, 22% in Argentina and 6% in Canada where there was a slight decrease between 1999 and 2001.

Figures indicate that there has been significant extension of NT areas during the past decade: 35-fold, 14-fold, 110-fold and 5-fold respectively in Argentina, Brazil, Paraguay and USA (Fig 2). Comparatively, GM crops have increased more than 30-fold in only six years (1996-2001).

GM crops are cultivated in 13 countries^[4] while OA is practised in about 100 countries^[11]. The number of countries that have adopted NT/CA technologies is not known due to lack of data. The historical development of NT/CA (www.rolf-derpsch.com) shows that these technologies are little adopted in many Asian and African countries even if their suitability is suggested^{[6][7][12][13]}. An interesting feature drawn from the figures is the concentration of NT, OA and GM crop technologies in the USA, MERCOSUR countries⁶ and in 11 out of 17 countries of the Cairns Group⁷ (Table 2, Fig. 1). Argentina seems to be the country of co-existence of NT, OA and GM crops and conventional agricultural systems. The co-existence of GM and non-GM crops in agriculture is being investigated in Europe⁸; learning from the Argentinean case may benefit EC efforts.

⁴ According to European Conservation Agriculture Forum (ECAAF), Conservation Agriculture refers to several practices which permit the management of the soil for agrarian uses, altering its composition, structure and natural biodiversity as little as possible and defending it from degradation processes (e.g. soil erosion and compaction). Direct sowing (non-tillage), reduced tillage (minimum tillage), non - or surface-incorporation of crop residues and establishment of cover crops in perennial woody crops (of spontaneous vegetation or by sowing appropriate species) in perennial woody crops or in between successive annual crops, are some of the techniques which constitute conservation Agriculture. Generally, Conservation Agriculture includes any practice which reduces, changes or eliminates soil tillage and avoids residues burning to maintain enough surface residue throughout the year (www.ecaf.org).

According to FAO (2003), NT/CA maintains and improves crop yields and resilience against drought and other hazards, while at the same time protecting and stimulating the biological functioning of the soil. The essential features of NT/CA are: minimal soil disturbance restricted to planting and drilling; maintenance of a permanent cover of live or dead vegetal material on the soil surface; direct sowing; crop rotation combining different plant families (e.g. cereals and legumes); adequate biomass generation; and continuous cropland use. Variants of NT/CA in different countries, depending on the perceived importance of one or another aspect of the approach are: zero tillage; minimum or low tillage; *plantio directo na palha* (direct planting in straw); *siembra directo permanente* (permanent direct seeding); and conservation tillage.

⁵ UE, Accession Countries, EFTA Countries plus Turkey, Bosnia-Herzegovina, Croatia and Yugoslavia.

⁶ Argentina, Brazil, Paraguay, Uruguay.

⁷ Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, New Zealand, Paraguay, South Africa, Uruguay.

⁸ Scenarios for co-existence of genetically modified, conventional and organic crops in European agriculture. Synthesis Report. IPTS, EC-JRC, Seville. 2002. 133pp. (http://www.jrc.cec.eu.int/download/gmcrops_coexistence.pdf)

OA is progressing^[11] in the greater part of Europe while the backwardness of NT/CA technologies is noticeable even if their suitability is recognised^{[9][14][15]}. Lessons learned from the Brazilian experience show that shifting from conventional to NT/CA farming is not a simple switch from one technical package to another^[2]. Close collaboration between all the stakeholders (researchers, extensionists, farmers and the private sector), on-farm trials and participatory technology development, education and training, sound strategy and support policy are among the key factors of the Brazilian success story. The lack of information on agro-ecology and the high demand for management skills are major barriers to the adoption of sustainable agriculture^[4]. This is also valid for OA that is currently driven by consumer demand reinforced by the fear generated by food and water contamination, (dioxin, pesticides, heavy metals, etc.), livestock epidemics (BSE and foot-and-mouth disease, etc.) and GM food. The long-term viability of OA is conditioned by the ability of scientific and technical responses to concrete issues; a recent survey of 4638 US certified organic farmers^[16] has shown that the research priorities ranked highest by farmers are weed management (including weed ecology, soil fertility, plant allelopathy, rotation strategies, cultivation equipment and techniques, tillage, reduced tillage and no-till methods, mulching and composting), fertility management and crop health, organic growing practices and product nutritional value, soil biology and crop rotation. The expansion of NT/CA faces the same issues.

KASSA intends to use inventories, assessment, cross analysis, refinement and the sharing of findings on sustainable agriculture research results and practical lessons in order to achieve the following:

- Reinforce the capacity of the European Research Area (ERA). It will provide major new relevant and on-site based research items and approaches contributing to agriculture, the environment and the sustainability of natural resources. This might help ERA to play an effective role as interface between societal needs and policy requirements;
- Enhance the knowledge and initiative capacity of European farmers and extensionists. It will provide reliable practical information that might help to match new, profitable economic strategies and the adoption of new technologies for the combined sustaining of agricultural activity and protecting the environment and natural resources;
- Increase awareness and promote the commitment of NGOs, farmer organisations and the private sector through free, easy access to a website information system on sustainable agriculture (knowledge and prospects);
- Contribute refined relevant key information that may help policymakers to develop and implement a new agricultural and environmental policy that matches the requirements of sustainable development.

Moreover, KASSA's achievements will provide an updated, state-of-the-art view of sustainable agriculture in Europe and other countries. This will provide a reliable basis for the development of new concepts and site-specific technological strategies for sustainable resources management. The information assembled will form a reference database of great interest for land-use modelling purposes; it will give the European scientific community an opportunity to initiate the setting up of a comprehensive logical and conceptual framework aimed at collecting and formatting biophysical and socio-economic patterns in support of policy-making.

Hence, KASSA will contribute to the work programme of the FP6 sub-priority 6.3 Global Change and Ecosystem. More specifically, KASSA results will be of benefit to research areas: I- Impacts and mechanisms of GHGs emissions and carbon sinks; II- Water cycle, including soil-related aspects; III- Biodiversity and Ecosystems; IV- Mechanisms of desertification; V- Sustainable land management and, to complementary researches dealing with risk assessment, environmental quality.

Table 1: area under NT/CA, OA and GM crops x 1000 ha

Region/Country	NT/CA					OA	GM crops			
	No-tillage			Conservation Tillage						
	Area	% of total cultivated area	Area	Area	% of total cultivated area	Area	Area			
NORTH & SOUTH AMERICA	1990(1)	1999/2000 (1)		2001/2002 (6)	1999/2000 (1)		2003(2)	1996(3)	1999(3)	2001(3)
Argentina	300	10 500	37	14 500	9 250		3 192		6 700	11 800
Bolivia		350		417	350					
Brazil	1 000	14 330	25	17 356	14 330		276			
Canada		4 080		4 080			431		4 000	3 200
Chile		100		130	100		273			
Colombia		70		70	70					
Mexico		650		50			143			
Paraguay	10	1 100	52	1 300	1 100		62			
Uruguay		50		250	50		678			
USA	4 050	21 120	17,5	22 410	44 120		950		28 700	35 700
Venezuela		150		170	150					
EUROPE	2001 (4)			2001/2002(6)	2001 (4)					
Belgium					140	10	22			
Czech Republic							218			
Denmark					230	8	175			
Finland		30					148			
France		50	0,3	50	2 500	14	420			
Germany		354	3		2 375	20	632			
Hungary		8			500	10	105			
Ireland		0,1	0,3		10	4	30			
Italy		80	1	80	560	6	1 230			
Portugal		25	0,8		39	1,3	71			
Slovakia		10	1		140	10	59			
Spain		300	2	300	1 500	10	485			
Sweden							193			
Switzerland		9	3		120	40	102			
Ukraine							164			
United Kingdom		24	1		1 440	30	680			
ASIA				2001/2002(6)						
North India and Pakistan				561						
China							301		300	1 500
AFRICA										
Ghana				45						
South Africa							45		100	200
OCEANIA										
Australia		8 640		9 000			10 500			200
TOTAL WORLD (5)		62 140		72 069			22 811	1 700	39 900	52 600

Sources: (1) = [17] and [3]; (2) = [11]; (3) = [4]; (4) = [18]; (6) = [19].

(5) Total surfaces take into account other countries and regions missed in the table.

Table 2. Main NT, OA and GM crops adopters in the world

Area (x1000ha)						
	NT(2001/2002)	%	OA (2003)	%	GM Crops (2001)	%
USA	22 410	31,1	950	4,2	35 700	67,9
CAIRNS GROUP	47 103	65,4	15 457	67,8	15 200	28,9
MERCOSUR	33 406	46,4	4 208	18,4	11 800	22,4
EUROPE	9 554	13,3	5000	21,9	(⁹)	
WORLD	72 069	100	22 811	100	52 600	100

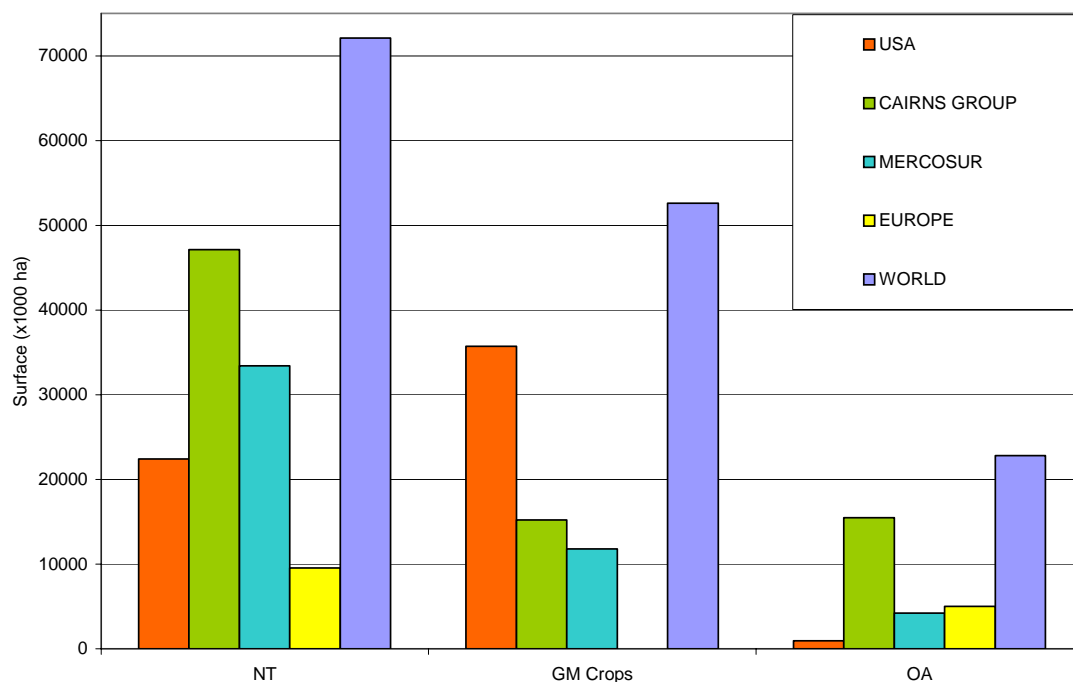


Fig 1. Repartition of NT, GM Crops and OA surfaces among the main adopters

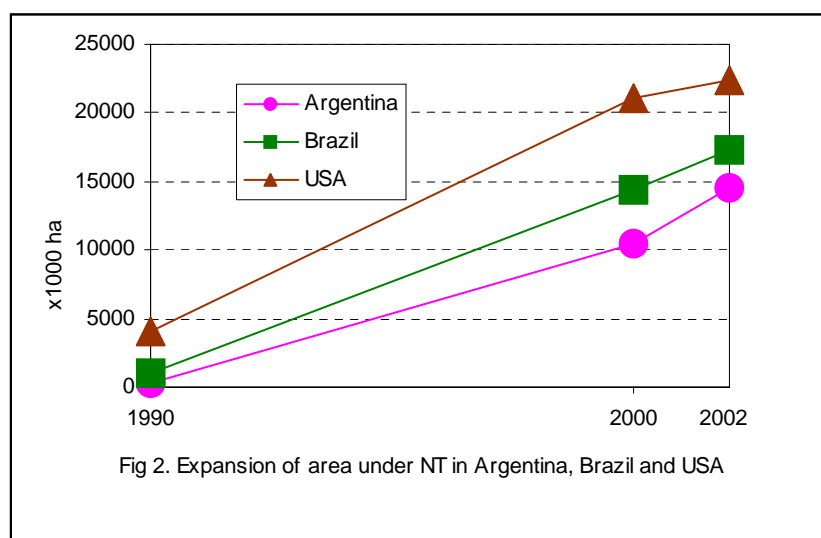


Fig 2. Expansion of area under NT in Argentina, Brazil and USA

⁹ Less than 200000 ha of GM crops in the EU according to the ISAAA Preview No 27 – 2002 “*Global Status of Commercialized Transgenic Crops: 2002*” by Clive James. 24pp. ISBN 1-892456-31-1. ISAAA is the International Service for the Acquisition of Agri-biotech Applications. www.isaaa.org.

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- See also workshops proceedings and report of the EC-Concerted Action (AIR 3-CT 93-1464):
- Proceedings of the EC-Workshop-I- Giessen, 1994; ISBN 3-930600-16-1;
 - Proceedings of the EC-Workshop-II- Silsoe, 1995; ISBN 3-930600-46-3;
 - Proceedings of the EC-Workshop-III- Evora, 1996; ISBN 3-930600-69-2
 - Proceedings of the EC-Workshop-IV-Boigneville, 1997; 3-930600-95-1;
 - Final Report "Experience with the applicability of No-tillage crop production in West-European countries" Tebrügge F. and Böhrsen A. Eds, Giessen, 1998. 90p. ISBN 3-922306-30-6.
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5. Potential Impact

KASSA will provide comprehensive knowledge on sustainable agriculture as well as the gaps to be filled. This strengthening of scientific knowledge will contribute to orientating the future EU sustainable development strategy, the 6th environment action programme, and further action expected in favour of soil policy in Europe.

KASSA results may feed:

1- a number of areas of the Global Change and Ecosystems sub-priority research, in particular V.1.1 and V.2.1. Numerous papers are published on the impacts of agro-ecological systems and technologies on soil properties and functional improvement such as carbon stratification and sequestration, biodiversity recovery and bio-reactivity processes; the limiting of negative processes such erosion and desertification; the water cycle: runoff and flood mitigation; agro-biodiversity, cover crops, crop rotation and weed and pest management, etc.;

2- two main research tasks of the 5th priority: Food security and safety (T31 and T32). Agro-ecological systems improve soil physical, chemical and especially biological properties; consecutive soil transformation, purification and buffering functions will protect and enhance water and food chain quality and safety. In parallel, cover crops and crop rotation improve soil fertility, quality and nutrient cycles and also reduce the occurrence of pests and diseases and weed infestation; it leads to better management and a drastic reduction of external chemical inputs;

3- policy-oriented research, sub-priority 8.1, and mainly areas under the Sustainable management of Europe's natural resources priority. In particular, results on the socio-economic and environmental impacts of agro-ecological systems and technologies may reinforce research areas addressing the modernisation and sustainability of agriculture (8.1.B.1.1), tools and assessment methods for sustainable agriculture management (8.1.B.1.2) and environmental assessment (8.1.B.1.5).

The results will be widely disseminated beyond the EU and participating countries and research teams. In addition to the reports released (publications, CD-ROM), easy access to information will be provided on a web site, in an appropriate format directly meeting the requirements of stakeholders: farmers and extensionists, researchers, civil society representatives and policymakers. The project Central Coordinator will operate and update this web site beyond the project duration.

In the context of globalisation, European countries undoubtedly have an interest in contributing to the development of global/local solutions aiming at agricultural and environmental sustainability, food security and safety, poverty alleviation and economic and social viability. Developing an interconnected initiative, KASSA will mobilise substantial European and Southern research capacity as well as CGIAR¹⁰ programmes. This should lead to the identifying of fundamental processes, factor interactions and resulting impacts that will jointly benefit agriculture in Europe and in Southern countries. Gap identification may enable progress in knowledge and strengthen technological innovation and expertise capacity in support of agricultural viability as well as Europe-South solidarity in addressing challenging issues.

6. Project management and exploitation/dissemination plans

The number, the diversity and the geographical distribution of the partners in KASSA give the opportunity to integrate scales (local-regional-national-European-global) and disciplines in the achievement of the project. Tasks will be performed in co-ordinated platforms or regional set-ups that make it possible to link local/regional past and ongoing research and experiences in sustainable agriculture to biophysical, socio-economic, cultural and historical conditions. Moreover, this organisation will allow the addressing of tasks in a suitable, pragmatic manner.

¹⁰ Consultative Group for International Agricultural Research

6.1 Project structure and management

There are 4 platforms: **Europe, the Mediterranean, Asia and Latin America**. Each platform is co-ordinated regionally. A Central Co-ordination body and a Co-ordination and Management Unit as well as

a Steering Committee are provided for all the platforms.

Hence, KASSA is structured as follows:

- The 4 Platform Co-ordinations –(PCs);
- The Central Co-ordination –(CC);
- The Coordination and Management Unit –(CMU);
- The Steering Committee –(SC).

KASSA PCs

KASSA platforms' Co-ordinations are the legal leading bodies within the platforms.

The platform leaders manage the activity within the platforms they lead i.e. bear legal and accounting responsibility for the work related to work packages in respect to the established milestones and deliverables.

The 4 platform Coordinators belong to the leading bodies. They are individually responsible for the management and for the timing and fine-tuning of their own platform activities. They facilitate and develop activity agendas within their platforms. They are responsible for the management of the 3 platform workshops including their preparation and attending, the validation of the related reports and for the finalisation of deliverable outputs.

In accordance with the CMU and in respect to avoid duplication, the platforms' co-ordinators can distribute specific tasks between the platforms' participants.

KASSA CC

The KASSA Central Co-ordination is the legal leading body of KASSA.

CIRAD, as leading legal body of the KASSA Consortium, is responsible for the management strategy of the project and its full implementation according to the established milestones and, is accountable to the European Commission. CIRAD is the legal entity representing the Consortium and acts on behalf of the Consortium in between meetings for tasks delegated to it, and for external representation.

The KASSA Central Coordinator is a permanent staff member of CIRAD. As the appointed leading partner, he manages the central activities budget for the KASSA consortium (i.e. bears legal and accounting responsibility for the central budget) as well as the KASSA secretariat. He reports to the Consortium through the CMU.

KASSA Central Co-ordinator is responsible for global coherence of the project, coordination and integration across the platforms and work packages, the quality and relevance of the deliverables and the monitoring of KASSA progress. He is responsible for the operational organisation and the achievement of the meeting that validates KASSA final results as well as for the operational organisation and management of the international closing conference and its proceedings.

In consultation with the PCs and if necessary with the Steering Committee, the CC opens calls and participates in the selection of external bodies for complementary expertise, service or human resource support.

KASSA CMU:

CMU is constituted by the Platforms' Co-ordinators plus the Central Co-ordinator.

CMU is in charge of the guidance, the monitoring of the project through the milestones fine respect and provide advice for decision making within the platforms through continuous, close contact and exchange between members.

CMU members meet at the starting of the project, at mid-time of work packages implementation and on the occasion KASSA validation meeting. If necessary, the CC may organise *ad hoc* meetings.

CMU advises on the subcontracting of external expertise when required, and globally on KASSA management strategy and decision-making within the project.

CMU achieves his tasks in close contact with the Steering Committee.

KASSA SC

The SC is in charge of the scientific validation of KASSA results. It will meet three times: at the end of the first work package and at the time of the KASSA findings validation meeting as well as at the time of the international conference. Between the three meetings, it interacts with the CMU and provides it with advices and recommendations regarding the relevance of the results and the way to tackle possible remaining questions. It may do it through bringing controversial ideas, emphasizing lack of knowledge and designing perspectives for future relevant research actions.

If necessary and under the agreement of the CC, the SC may contact any external personality from the scientific or agricultural community for complementary information or for better understanding of key questions.

The SC will finally endorse the content of the final recommendations produced by the ending Conference of KASSA.

SC is constituted by 6 members; 3 are external to KASSA consortium, 3 are partners of KASSA.

The list of expected members:

External to KASSA:

- **Ren Wang - China:** Dr., Former Deputy President of the Chinese Academy of Agricultural Sciences – Beijing; present Deputy Director General for research in IRRI-International Rice Research Institute. (confirmed) ;
- **Michel Robert – France:** Dr., retired researcher, former Director of research of the French Ministry of Environment. (confirmed);
- **EC official representative** in the field of agriculture. (to be confirmed).

KASSA partners

- **Roberto Atilio Peiretti – Argentina:** M.Sc., President of CAAPAS-Confederation of American Association for the Production of Sustainable Agriculture. (confirmed);
- **Jaromir Kubat –Czech Republic:** Dr., Researcher in soil biology, Deputy Director of the RICP – Research Institute for Crop Production. (confirmed);
- **KASSA CC** (Francis Forest, if necessary assisted by CMU members).

The KASSA partners

Considering the shared responsibility within the Consortium, all KASSA partners develop their activities and specific tasks under the responsibility of the PCs. They must respect objectives, milestones and fulfil scheduled activities and specific tasks within the work packages in accordance to the general work plan of the project.

In case of unpredictable problems with consequence on the global activity of KASSA, partners must inform the correspondent PC and the CC in a as short as possible time.

Project implementation agreement

In order to guarantee favourable conditions for global success, a consortium agreement for KASSA implementation will be set up between CIRAD, as leader of the KASSA Consortium, and all partners of KASSA. The KASSA consortium agreement will be signed before the starting of the project.

Presentation of the Platforms Co-ordinations

In the following are presented the platforms' leading bodies and persons. Description of participants and consortium presentation is in appendix A.1.

European platform:

Countries involved: **Czech Republic, Denmark, Estonia, France, Germany, Norway, Ukraine and the United Kingdom.**

Co-ordination entity: **INRA, France** (www.inra.fr)

INRA is a French public mission-oriented research institute. It strives to meet new society's expectations (development of sustainable agriculture, food and the effect on human health, environment, rural development and territories...) by intervening in various ways: production of knowledge, training in research, dissemination and exploitation of research results, scientific expertise, and involvement in the science-society debate. It achieves its tasks through 17 scientific Departments and 257 research units. INRA has total 10600 staff members including 4600 scientists.

The Department of Environment and Agronomy contributes to the integrated study of the functioning of cultivated ecosystems through its research between plant production and the environment. We develop research projects with a dual focus: the achievement of production objectives with respect to quantity and quality as well as the maintenance and / or restoration of the quality of the environment based on the known impact of agriculture on soil, water and the atmosphere.

The INRA-INA PG Agronomy research unit carries out research to improve the durability of cropping systems, especially in regions mainly growing cereals. Three kinds of results are achieved:

- * Scientific production: study the effects of cultivation techniques and cropping systems on the quality of land, production and the environment; develop methods to study these effects, new rules to contribute to decision-making and to improve cropping systems; improve knowledge on the failures of current systems.
- * Technical innovation (to meet the needs of our partners), thanks to the knowledge produced and/or used as a basis for technical development: new rules for decisions, innovative cropping systems;
- * Tools and references (based on knowledge and methods) to support farmers, agricultural engineers, companies, etc. in taking decisions.

Co-ordinator: **Dr. Stephane de Tourdonnet** (tourdonn@inapg.inra.fr)

Stéphane de Tourdonnet, 35 years, graduated in agronomy at the Institut National Agronomique Paris-Grignon (INA P-G), in 1991. He received a PhD degree from INA P-G in 1998 on the subject 'Control of quality and nitrogen pollution in greenhouse lettuce production: diagnosis and modelling the effects of cropping systems'. He joined the INRA / INA P-G Agronomy Unit in 1992. His activities were dealing with

how to manage environmentally-friendly production systems which conserve water resources and soil quality, whilst adapting to changes in the technical or socio-economic environment, in horticulture (1992-2001) and then on direct seeding mulch based cropping systems (DMC).

He is now senior lecturer at INA P-G and he is leading a research group working on DMC in the Agronomy Research Unit.

Some selected publications in relation with the proposal:

de Tourdonnet S. Carof M. Saulas P. (2003). A contribution to the development of cropping systems with permanent cover crops in open field in France. *Proc. II World Congress on Conservation Agriculture, Iguassu, Brazil, 10-15 august 2003*, 262-265.

Richard G., Cousin I., Roger-Estrade J., Coquet Y., Garnier P., de Tourdonnet S., Baumgartl T., Horn R. (2003) Modelling water transfert in agricultural soils at the field scale. *keynote paper XVI ISTRO Congress, Brisbane, Australia, 13-18 July 2003*, 119-121.

de Tourdonnet, S., J. M. Meynard, F. Lafolie, J. Roger-Estrade, J. Lagier and M. Sebillotte (2001). Non uniformity of environmental conditions in greenhouse lettuce production increases the risk of N pollution and lower product quality. *Agronomie* **21**: 297-309.

Mediterranean platform:

Countries involved: **Italy, Greece, Morocco and Spain.**

Co-ordination entity: **CSIC, Spain**

The **Spanish Council for Scientific Research (CSIC)** (www.csic.es) is an autonomous multi-sectorial and multi-disciplinary public research body affiliated to the Ministry of Science and Technology with presence throughout the national territory. The CSIC participates in the consortium with two research groups, one group from the Estación Experimental de Aula Dei (EEAD-CSIC) (www.eead.csic.es), acting as the Co-ordination entity of the Mediterranean Platform, and another group from the **Instituto de Recursos Naturales y Agrobiología de Sevilla (IRNAS-CSIC)** (www.irnase.csic.es). Both Institutes are devoted to scientific research on soil, plant and water resources to support sustainable and environment-friendly agricultural systems.

EEAD-CSIC Group

The activities and technological objectives of the EEAD Group participating in this SSA are aimed to improve agricultural practices in dryland farming systems and to control the physical degradation of agricultural soils in Aragon and other Mediterranean desertification-threatened regions. Currently, the Group is interested in the assessment of conservation tillage systems for soil and water conservation in rainfed agroecosystems. The Group has participated since 1989 in thirteen national and international research projects funded by different organisations including the European Union.

Co-ordinator: **Dr. José Luis Arrúe** (arrue@eead.csic.es)

Research Scientist and Head of the Soil Science Department of the EEAD-CSIC. Ph.D., 1977, University of Seville (Soil Physics). Specialist in Soil Physics and Soil and Water Management and Conservation. Participant in several national (21) and international (8) research projects and principal investigator in ten of them. Since 1989 he is the responsible scientist of the Soil Physics and Conservation Tillage Group at the EEAD. Authored or co-authored 50+ publications. Member of the Spanish Soil Science Society, Soil Science Society of America, American Society of Agronomy, Soil and Water Conservation Society and Spanish Association for Conservation Agriculture/Living Soils. Contractor of three projects funded by the European Union within the III RTD Framework Programme (Environment Programme, EV5V-CT93-0272) and IV RTD Framework Programme (Environment and Climate Programme, ENV4-CT95-0182; ENV4-CT97-5063). Member of the co-ordination committee of the first national Special Research Action that launched in 1996 the *Spanish Conservation Tillage Network* and co-editor of the 1998 report on the state-of-the-art of conservation tillage research in Spain.

Some selected publications in relation with the proposal:

- López, M^a.V., Arrúe, J.L., 1997. Growth, yield and water use efficiency of winter barley in response to conservation tillage in a semi-arid region of Spain. *Soil Till. Res.*, 44: 35-54.
- Arrúe, J.L., 1997. Potential impact of conservation tillage on soil as a carbon sink. p. 189-199. *In*: L. García and P. González (Eds.), *Conservation Agriculture: Agronomic, Environmental and Economic Bases*, AEAC/SV, Córdoba, Spain (in Spanish).
- López, M^a.V., Gracia, R., Arrúe, J.L., 2000. Effects of reduced tillage on soil surface properties affecting wind erosion in semiarid fallow lands of Central Aragón. *Eur. J. Agron.*, 12: 191-199.
- López, M^a.V., Gracia, R., Arrúe, J.L., 2001. An evaluation of wind erosion hazard in fallow lands of semiarid Aragón (NE Spain). *J. Soil Water Conserv.*, 56: 212-219.
- López, M^a.V., Moret, D., Gracia, R., Arrúe, J.L., 2003. Tillage effects on barley residue cover during fallow in semiarid Aragón. *Soil Till. Res.*, 72: 53-64.

Asian platform:

Countries involved: **RICE and Wheat Consortium involving India and Pakistan, Vietnam.**
Co-ordination entity: **CIMMYT- RWC, India** (www.rwc-prism.cgiar.org/rwc/)

The Consortium was established in 1994 as an Eco-regional Initiative of the Consultative Group on International Agricultural Research (CGIAR), involving the National Agricultural Research Systems of South Asia, the International Agricultural Research Centers and Advanced Research Organizations. We strive to form a network between national and international agricultural institutions to address the issues of productivity enhancement of rice and wheat in a sustainable fashion. Our research agenda is supported by many sources, namely the Governments of Bangladesh, Nepal, India, Pakistan, Netherlands, Sweden, Switzerland, Department for International Development (DFID), Asian Development Bank (ADB), Australian Centre for International Agricultural Research (ACIAR), International Fund for Agricultural Development (IFAD), United States Agency for International Development (USAID), and the World Bank.

The [International Maize and Wheat Improvement Center \(CIMMYT\)](http://www.cimmyt.org/), acts as the Convening Center of the Consortium on behalf of the partners and the CGIAR. The activities of the Consortium are implemented by a Facilitation Unit, located in the India Office of the CIMMYT in New Delhi.

Co-ordinator: **Dr. Raj Gupta** (r.gupta@cgiar.org)

Dr. Raj K Gupta, PhD, is the Regional Coordinator of the Rice-Wheat Consortium and CIMMYT-India spanning the countries of Bangladesh, India Nepal and Pakistan. He has over fifteen years experience in the agriculture research sector in the Indo-Gangetic Plains region of South Asia.

Dr. Gupta has been involved with the AICRP on use of low quality waters, CSSRI, Karnal, India and in the rice-wheat cropping system projects of the ICAR and of the RWC, New Delhi in Principal Investigator or Co-PI capacities.

There are many significant achievements to Dr. Gupta's credit. To list a few –

- New irrigation water quality criteria for monsoonal climates;
- Ground water quality map for irrigation for India;
- Tillage and crop and soil management practices with low quality waters;
- Afforestation techniques in salt affected soils with low quality water;
- New diagnostic criteria to apportion saline-sodic branch into saline and sodic soils;
- Amelioration of waters with residual alkalinity;
- New insights into dispersive behavior of organics during sodication phase;
- *Dorouv Technology* was developed for skimming the fresh quality water from saline aquifers in coastal sandy soils;
- Permanent raised bed-furrow, Direct seeded rice and minimum tillage practices (Zero tillage) in rice-wheat systems.

– Rank among the best.

Dr. Gupta has nearly one-hundred and fifty publications to his credit – these include research articles, symposia/conference presentations, books, information bulletins, and technology promotion brochures.

Some selected publications in relation with the proposal:

Minhas, P.S. and Raj K. Gupta. 1992. Irrigation water quality Assessment and Management Information and Publication Division. ICAR, New Delhi, 123 p.

Minhas, P.S. and Raj K. Gupta. 1993. Conjunctive use of saline and non-saline waters (Part I, II & III). Agric. Water Manage 23: 125-160.

Gupta, Raj K, N.T. Singh and M. Sethi. 1994. Groundwater quality for irrigation in India, (Map 1:6 million scale), Tech. Bull. 19, CSSRI, Karnal, 1994. p. 16.

Gupta, R.K., R.K. Naresh, Peter R. Hobbs, Zheng Jiaguo and J. K. Ladha. 2002. Sustainability of Post-Green Revolution Agriculture: The Rice-Wheat Cropping Systems of the Indo-Gangetic Plains and China. In Ladha et al. (ed) Improving Productivity and Sustainability of Rice-Wheat Systems: Issues and Impacts. ASA Special Publication Number, 60 ASA, Madison, Wisconsin, USA, 2003.

Latin American platform:

Countries involved: **Argentina, Bolivia, Brazil and Mexico.**
2 Co-ordination entities: **IAPAR (www.iapar.br) & EMBRAPA (www.embrapa.br), Brazil.**

The importance of the platform in terms of experience and expansion of farmers' led alternatives to conventional agriculture and subsequent results and lessons make it necessary to join effort of the two main Brazilian research institutions IAPAR and EMBRAPA. In accordance with their own specificity, IAPAR will coordinate the platform activities and tasks related to the work packages milestones and deliverable with focus on experiences and results in the family farming systems; while EMBRAPA will coordinate the platform activities and tasks related to work packages, milestones and deliverables with focus on experiences and results obtained in large-scale farming systems. IAPAR and EMBRAPA will work in very close collaboration and consultation in order to avoid any duplication and to enhance the coherence of platform global activity and subsequent results.

IAPAR

The IAPAR – Agricultural Research Institute of the State of Paraná – is a public research institute established in 1972. Although its mandate is related to the State of Paraná, due to its background in the field of sustainable agriculture, IAPAR has been a reference at the national and international level.

In addition to research and training activities, IAPAR is also involved in the formulation of agricultural policies for the State of Paraná and municipalities. Outside the State, the staff of the institution has been doing consultancies to organisms such as FAO, the World Bank, municipalities, NGOs and to other agricultural research institutes in the country.

IAPAR is a centre of excellence in the fields of Conservation Agriculture/NoTillage Systems - particularly for family farmers/small farms - and has a large background on research and development based on the Systems Approach and Participatory Technology Development. With 17 experimental stations distributed across the State, the institute is in close contact with farmers, cooperatives, NGOs and local extension services.

Regarding research and development of No-Tillage Systems, IAPAR has an expertise in many components such as cover crops, weed management and equipment. IAPAR is the first research institute in Brazil that worked on R&D of no-tillage for family/small farmers. The first prototype of a animal-drawn no-tillage planter was designed by IAPAR in 1985, which, after a process of adaptation together with extensionists and farmers, is currently being manufactured in a large-scale basis and even exported to other countries in Africa and Latin America.

According to the estimates of the Brazilian Federation of No-tillage, the cultivated area under No-Tillage in the State of Paraná is around 5 million hectares. Family farmers from the State of Paraná are the pioneers on the adoption of the No-Tillage System, which was a result not only of the available technology developed by the institute, but also because of the participatory methodologies being used since 1980, which is particularly suited for working with farmers with low financial resources.

Co-ordinator: **Mme Fátima Ribeiro** (fatima_ribeiro@iapar.org)

Fátima Ribeiro is agronomist and MSc on Agricultural Engineering/ Farm Mechanisation. She also has a background on Research Oriented to Development in Agriculture. She is one of the team members of the Farming Systems Research Programme of IAPAR, and is being working on research and development of No-tillage systems for family farmers

based on the use of animal traction. Her activities are more oriented to research at farm level with the participation of farmers, extensionists and manufacturers. In addition to research, she has been involved in the coordination of training activities and consultancies for FAO and the World Bank in the following countries: Cambodia, Indonesia, Tanzania, Zambia and Uganda.

In the last 18 months, she was hosted by CIRAD CA Programme Gestion des Ecosystemes Cultivés, in order to launch and facilitate the DMC (Direct Sowing, Mulch based and Conservation agriculture), Global Programme, which is a Global Partnership Programme under GFAR (Web Page: <http://agroecologie.cirad.fr/dmc/index.php>). The main purpose of this programme is to strengthen the capacity of key stakeholders to foster the adoption of DMC technologies all over the world.

Currently, Fatima Ribeiro is back to her institution IAPAR, and is encharged of the coordination of 2 projects: the first one aims at developing no-tillage systems without the use of herbicides, in collaboration with small farmers organisations; the second one is the assessment of the performance of animal-drawn equipment for no-tillage (planters and sprayers).

Some selected publications in relation with the proposal:

Ribeiro, M. F. 200. No-tillage equipment for small farms in Brazil. In: Garcia-Torres, J.; Benites, J. and Martinez-Vilela (Eds.). I World Congress on Conservation Agriculture. Vol I: Keynote Contributions. Madrid, ECAF/FAO. pp 237-243.

Ribeiro, M.F.; CASÃO JR, R.; ARAUJO, A.G.; FIGUEIREDO, P.; BENASSI, D.A. 1998. Development of direct sowing equipment for smallholders: the experience of IAPAR, Brazil. In: Rasolo, F. & Raunet, M. (Eds.) Actes de l'atelier international gestion agrobiologique des sols et des systèmes de culture. Antsirabe, Madagascar; pp 231-238.

EMBRAPA

The Brazilian Agricultural Research Corporation-Embrapa' mission is to provide feasible solutions for the sustainable development of the Brazilian agribusiness by generating, adapting and transferring knowledge and technology that benefits the Brazilian Society. From the very beginning, on April 26, 1973, Embrapa has generated and recommended more than nine thousand technologies for Brazilian agriculture, reduced production costs and helped Brazil to increase the offer of food while, at the same time, conserving natural resources and the environment and diminishing external dependence on technologies, basic products and genetic materials. Networking through 37 research units, 3 services and 15 central units, Embrapa is present in almost all the states of the Union, each with its own ecological conditions. There are 8,619 employees in Embrapa, of which 2,221 are researchers 45% with master degree and 53% with doctor degree. Embrapa coordinates the National Agricultural Research System with cooperated institutions carrying out research in geographical areas or in defined fields of scientific knowledge. Embrapa maintains projects in International cooperation in order to perfect knowledge of technical and scientific activities or to share knowledge and technology with other countries.

Co-ordinator: **Dr José Eloir Denardin** (denardin@cnpt.embrapa.br)

José Eloir Denardin, 51 years, is graduate in agronomy at the Universidade Federal de Santa Maria, in Santa Maria, Rio Grande do Sul, Brasil (1971-1974); his master degree was taken at the Universidade Federal do Rio Grande do Sul, in Porto Alegre, Rio Grande do Sul, Brasil (1976-1978); and his doctor degree was taken at the Universidade de São Paulo-Escola Superior de Agricultura Luiz de Queiroz, in Piracicaba, São Paulo, Brasil (1986-1990).

He concentrated effort on soil and water conservation research, mainly related to no-till system, at Embrapa Trigo – National Wheat Research Center, in Passo Fundo, state of Rio Grande do Sul, Brazil. Presently is Research and Development Chief, co-ordinating 57 scientists, since 1998.

He joined Embrapa Trigo in 1976. His activities concentrated on soil tillage and management practices researchwise, as well, in technology transference to extension workers and farmers and southern Brazil. Since early he was concerned with the transition from conventional tillage into minimum tillage and no-tillage system. From 1993 to 1998, he leadered a research and development project on no-tillage that contributed to improve the rate of adoption from 35,000 ha/year to 560,000 ha/year in the state of Rio Grande do Sul. Lately his research effort is concentrated on runoff management from no-till fields, basely concerned with the mitigation of surface water contamination.

Some selected publications in relation with the proposal:

DENARDIN, J. E.; KOCHHANN, R. A.; FAGANELLO, A.; SATTTLER, A.; BERTON, A. L. 2003. Sistema plantio direto: com ou sem práticas conservacionistas complementares de manejo da enxurrada? In: WORLD CONGRESS ON CONSERVATION AGRICULTURE, 2.=CONGRESSO MUNDIAL SOBRE AGRICULTURA CONSERVACIONISTA, 2., 2003, Iguassu falls=Fóz do Iguaçu. Producing in harmony with nature: extended summary e posters=Produzindo em harmonia com a natureza: resumos expandidos e posteres. Iguassu falls=Fóz do Iguaçu: Federação Brasileira de Plantio Direto na Palha; Confederación de Asociaciones Americanas para la Agricultura Sustentavel, v. 2, p. 310-313.

DENARDIN, J. E.; KOCHHANN, R. A.; DENARDIN, N. D. 2003. Adensamento e compactação em latossolos: fatos e hipóteses. In: WORLD CONGRESS ON CONSERVATION AGRICULTURE, 2.=CONGRESSO MUNDIAL SOBRE AGRICULTURA CONSERVACIONISTA, 2., Iguassu falls=Fóz do Iguaçu. Producing in harmony with nature: extended summary e posters=Produzindo em harmonia com a natureza: resumos expandidos e posteres. Iguassu falls=Fóz do Iguaçu: Federação Brasileira de Plantio Direto na Palha; Confederación de Asociaciones Americanas para la Agricultura Sustentavel, 2003. v. 2, p. 482-485.

HERMANI, L.C.; FREITAS, P.L.d.; DENARDIN, J.E.; KOCHHANN, R.A.; DE-MARIA, I.C.; LANDERS, J.N. 2002. Uma resposta conservacionista - o impacto do sistema plantio direto. Uso agrícola dos solos brasileiros. Rio de Janeiro: Embrapa Solos, p.151-161, capítulo 14.

DENARDIN, J.E.; KOCHHANN, R.A. 2002. Sistema Plantio Direto: evolução, problemas e perspectivas. In: REUNIÃO ANUAL DE PESQUISA DE CEVADA, 22., 2002, Passo Fundo. Anais e ata. Passo Fundo: Embrapa Trigo, p.38-54.

DENARDIN, J.E.; KOCHHANN, R.A.; COGO, N.P.; BERTOL, I. 2002. A experiência prático-científica em conservação do solo no Planalto Sul-rio-grandense. In: REUNIÃO SUL-BRASILEIRA DE CIÊNCIA DO SOLO, 4., Porto Alegre. Solos e qualidade ambiental: resumos expandidos. Porto Alegre: Sociedade Brasileira de Ciência do Solo – Núcleo Regional Sul: UFRGS - Departamento de Solos, 2002. 6p. 1 CD-ROM.

KASSA Central Co-ordination

Co-ordination entity: **CIRAD, France** (www.cirad.fr)

CIRAD – Centre for International Cooperation in Agricultural Research for Development - is a French state-owned organization (EPIC), specialized in agricultural research for the tropics and subtropics.

CIRAD has a mandate to contribute to rural development in tropical and subtropical countries. It aims at improving food security; encouraging sustainable natural resource management; increasing farmer's income, particularly for the poorest. It conducts research; implement experiments and, research and development projects; performs training operations and disseminate scientific and technical information. Its investigations cover agronomic, veterinary, forestry, agri-food, economic and social fields.

CIRAD collaborates with Northern and Southern partners (national research and development institutions; regional and international research centres; universities; farmer's organisations; private agricultural, forestry, and manufacturing companies; NGOs and funding agencies). It achieves its tasks through 7 Scientific delegations (Agronomy and environmental and natural resources management (AGER); Plant biology and breeding (MICAP); Crop protection (MIDEC); Animal production (MIPA) ; Technology (MITECH) ; Social sciences (MES) ; Applied Mathematics and biometrics (BIOM)) and 7 departments (Annual Crops (CIRAD-CA) ; Tree Crops (CIRAD-CP); Fruit and Horticultural Crops (CIRAD-FLHOR); Animal Production and Veterinary Medicine (CIRAD-EMVT); Forestry (CIRAD-FORET) ; Territories, Environment and People (CIRAD-TERA); Advanced Methods for Innovation in Science (CIRAD-AMIS).

CIRAD has total 1800 staff members including 900 senior staff. 600 staff members including 300 senior staff are appointed to programmes in about 50 countries. CIRAD headquarter is located in Paris (DG and Foreign affairs department); scientific and departments managing direction as well as central laboratories are located in Montpellier.

CIRAD annual budget (2002) is €176,175,000 including sales of expertise and activities on specific projects abroad for an amount of €44,387,000; basic salaries and core budget for €114,417,000 and other incomes for €17,371,000.

Co-ordinator: **Francis Forest** (francis.forest@cirad.fr)

Francis Forest, 56 years, is graduate in agronomy and rural Economics (Toulouse University, France) with a specialisation in tropical agronomy ESAT, Paris (1972-73). He is coordinating researches in the fields of agro-climatology, water management, biomass, and the environment, methane reuse for energy, integrated research management and innovation creation and dissemination.

From 1974 to 1978 he was in charge of an agro-climatologic research project in the framework of the International Hydraulic Centre -CIEH at Ouagadougou, dealing with the first big drought period that stressed the whole semi-arid Sudano-Sahelian region.

He joined CIRAD in 1979 as principal agro-climatologist at Annual Crops Department, in Montpellier. He developed with success a water balance modelling and yield prediction using both conventional agro-meteorological methods and remote sensing technology in partnership with the AGRHYMET Centre in Niamey (Niger). This tools are up to now working and are used for implementing the early warning activities on drought risk and its consequences on annual regional availability for food (millet, sorghum, groundnut..) in western Africa.

Since 1998, he is the head of the Agrosystem Programme: GEC. The activities of the 40 staff are addressing three main challenges: i) DMC cropping system creation and monitoring in tropical countries (Brazil, Madagascar, Cameroon, Vietnam, Laos and Tunisia); ii) Water resource efficiency improvement through diversified cropping systems associated to fine tuned land management technology; iii) Wastes reuse in agriculture regarding soil water quality, pollution, risk analysis, impact on biodiversity in humid ecosystems. GEC annual budget is about €4, 5 millions.

In the framework of the French international Action Plan on Agroecology, he is leading, since 1998, the research and development activities of CIRAD and its NARS and CGIAR partners devoted to research and dissemination of direct seeding mulch based cropping systems: DMC (<http://agroecologie.cirad.fr/index.php>).

Under his guidance, 22 PhD theses have been successfully achieved to the benefit of young scientists both from European and southern countries.

The GEC management team at Montpellier is made up of 4 senior scientists, 1 executive officer, 1 secretary for budget survey and logistic, 1 expert, 1 multimedia specialist for web site creation and maintenance, and 3 technical secretaries assisting the abroad staff.

Some selected publications in relation with the proposal:

F. Forest, A. Clopes, 1994. Le système de culture. Le modèle SARRA; Bamako, 9-13 décembre 1991. Ed. John Libbey Eurotext, Paris.

6.2 Plan for using and disseminating knowledge

KASSA is designed as a knowledge building process starting from an inventory of existing knowledge and ongoing experiences within each platform, followed by a set of successive steps aiming at a progressive refining of the findings. This refinement will be reached through the cross-critical analysis and sharing of the validated results from the platforms.

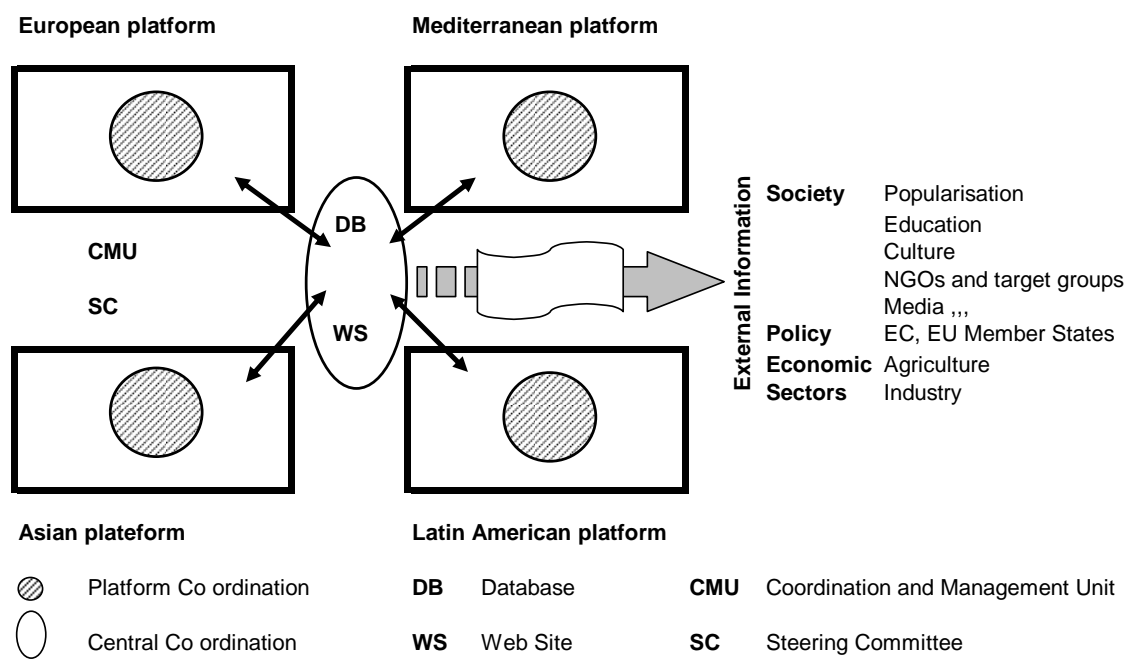
Communication within the consortium is organised through the website e-mailing service. Figure 3 shows the flow of information between the platforms through the PCs, the CC, using and feeding the database and the website.

KASSA intends to disseminate knowledge assembled in an appropriate format for easy access to end-users: farmers and professionals, extensionists, researchers, scientists, teachers, civil society representatives and policymakers. This will be made possible through the website and related multimedia services like CD-ROMs.

During KASSA implementation, access to the database and to the possible related developed implementation methodology is restricted to the consortium members and the Commission services.

Full KASSA partners in consultation with the Commission services decide on public dissemination conditions at the time of the International conference.

Fig. 3 Flowchart illustrating the knowledge building up process for sustainable agriculture promotion



6.3 Raising public awareness and participation

The shifting of current European agriculture towards more sustainability needs undoubtedly the commitment of the whole society. Beyond the participation of researchers who are also teachers, farmers’ organisations and NGOs and that contribute to the dissemination of the results and acquired knowledge, KASSA intends also to contribute to raising awareness of the general public and arousing its interest and support to sustainable agriculture. More precisely, economic, social and environmental benefits of proven alternative agricultural practices and systems and conditions of their applicability will be made known through KASSA website and its related multimedia services e.g. CD Roms production emphasizing results and lessons of KASSA. Dissemination, including e-mailing of adapted material, will target the communication and information media including web portals aiming to the general public and specific spheres as culture, economy, industry, policy and, lobbying groups like environmentalists. A special effort will be made towards education notably in agricultural and environmental sciences: Teachers and students will be invited to attend the KASSA meetings in each platform; teachers will be advised and encouraged to use KASSA findings in their programmes.

7. Workplan– for whole duration of the project

7.1 Introduction - general description and milestones

KASSA will be implemented through a progressive process of knowledge generation, sharing and building up, starting from an initial inventory of existing and ongoing results and experiences related to sustainable agriculture within each platform. Three (3) successive work sequences

(**WP1.1, 1.2, 1.3**) are planned. A validation meeting will follow each sequence in each platform (**WP2.1, 2.2, 2.3**); it will validate the reports before their cross sharing between the platforms.

WP1.1 = Comprehensive inventory and assessment;

WP1.2 = Learning from the platforms' experiences;

WP1.3 = Refining of each platform's findings.

The validation meeting, assembling all the co-ordinators and selected external experts, will perform an integrated critical analysis of all the platform outputs (**WP3**).

A concluding international conference (**WP4**) will debate and disseminate KASSA results and proposals. It will be attended by European policy and decision makers in addition to full participants and stakeholders.

The development of a web site (**WP5**) and a database (**WP6**) will support interactive communication between teams and researchers involved in the project as well as providing external public information.

Platform co-ordination (**WP7.1, 7.2, 7.3, 7.4**) will work in close cooperation with the central co-ordination (**WP8**); it will provide facilitation within platforms and ensure the co-ordinated implementation of the tasks in respect of the planned time schedule. Central coordination will provide facilitation between the platforms, the web site and the database and, it will ensure the general coherence of the project and the relevance of the deliverables.

Main KASSA milestones and their scheduling are shown in figure 4 and table 3.

Figure 4. KASSA milestones scheduling

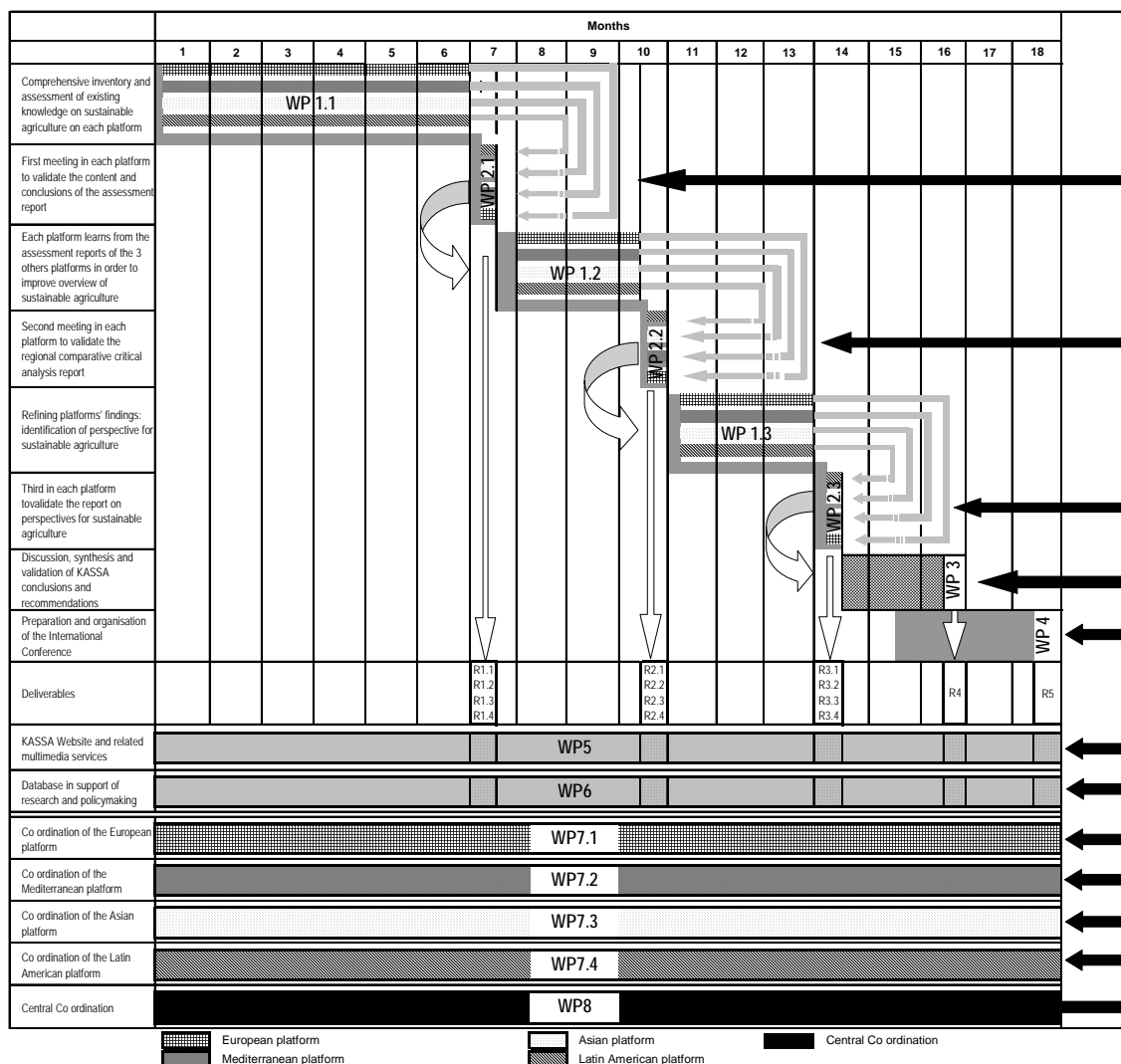
Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CMU																		
SC																		
Platforms																		
KASSA Results Validation																		
Int. Conf.																		
Website																		
Database																		

Table 3: KASSA main milestones

Milestone	Activity	Objective	WP concerned	Scheduling (month)
Starting meeting	Coordination and Management Unit	Organisation of the work within the platforms		1
Intermediate meeting		Monitoring and intermediate report	1.1	3
Intermediate meeting		Monitoring and intermediate report	1.2	8,5
Intermediate meeting		Monitoring and intermediate report	1.3	11,5
Final meeting		Validation of KASSA findings	3	15,5
First meeting	Steering Committee	Analyse of platforms reports and recommendations regarding next steps		7,5
Second meeting		Validation of KASSA findings		15,5
Third meeting		Conclusions, lessons and recommendations		17,5
First meeting	Platforms	Validation of platforms reports	2.1	6
Second meeting		Validation of platforms reports	2.2	9,5
Third meeting		Validation of platforms reports	2.3	13
International Conference	KASSA	Delivery of KASSA findings, lessons and recommendations	4	17,5
Design of the website	Website	Operating KASSA website	5	1
Design of the conceptual framework	Database	Operating Database and implementation methodology	6	2
Pilot prototype				7
Improving methodology				12
Adapting database to the platforms				16
Training end-users				18

7.2 Work planning, timetable and graphical representation of work packages

Fig 5. Flowchart of KASSA implementation



7.3 Work package list

Work package list (full duration of project)

Work-package No	Work package title	Lead contractor No	Person-months	Start month	End month	Deliverable No
1.1	Comprehensive inventory and assessment of existing knowledge on sustainable agriculture	2	67.6	0	6	D1.1*
		16				D1.2
		24				D1.3
		29-32				D1.4
1.2	Learning from platforms' reports	2	36.4	6,5	9,5	D2.1
		16				D2.2
		24				D2.3
		29-32				D2.4
1.3	Refining platform findings	2	36.25	10	13	D3.1
		16				D3.2
		24				D3.3
		29-32				D3.4
2.1	First platforms' meeting to validate the WP 1.1 draft reports	2	3.7	6	6,5	D1.1
		16				D1.2
		24				D1.1
		29-32				D1.4
2.2	Second platforms' meeting to validate the WP 1.2 draft reports	2	3.7	9,5	10	D2.1
		16				D2.2
		24				D2.3
		29-32				D2.4
2.3	Third platforms' meeting to validate the WP 1.3 draft reports.	2	3.7	13	13,5	D3.1
		16				D3.2
		24				D3.3
		29-32				D3.4
3	Discussion, synthesis and validation of KASSA results	1	7.7	13,5	16	D4
4	Preparation and organisation of KASSA international conference	1	3.7	14,5	18	D5
5	KASSA Website and related multimedia services	1	6	0	18	D6
6	KASSA Database and implementation methodology	1	16	0	18	D7
7.1	Co-ordination of the European platform	2	3	0	18	D1.1 D2.1 D3.1
7.2	Co-ordination of the Mediterranean platform	16	3	0	18	D1.2 D2.2 D3.2
7.3	Co-ordination of the Asian platform	24	3	0	18	D1.3 D2.3

						D3.3
7.4	Co-ordination of the Latin American platform	29-32	6	0	18	D1.4 D2.4 D3.4
8	Central Co-ordination of KASSA	1	6	0	18	D4 D5 D6 D7
	TOTAL		205,75			

* **D1.1= Deliverable 1 of European platform; D1.2= Deliverable 1 of Mediterranean platform; D1.3= Deliverable 1 of Asian platform; D1.4= Deliverable 1 of Latin American platform.**

7.4 Deliverables list

Deliverables list (full duration of SSA)

Del. no	Deliverable name	WP no.	Lead participant	Estimated person-months	Nature	Dissemination level	Delivery date (proj. month)
D1.1 D1.2 D1.3 D1.4	Drafts of the First Platforms' Reports First Platforms' Reports	1.1 2.1	2, 16, 24, 29-32	67.6 3,7	R R	CO CO	6 7
D2.1 D2.2 D2.3 D2.4	Drafts of the Second Platforms' Reports Second Platforms' Reports	1.2 2.2	2, 16, 24, 29-32	36.4 3,7	R R	CO CO	10 11
D3.1 D3.2 D3.3 D3.4	Drafts of the Third Platforms' Reports Third Platforms' Reports	1.3 2.3	2, 16, 24, 29-32	36.25 3,7	R R	CO CO	13 14
D4	KASSA Final Report	3	1	7,7	R	PU	17
D5	KASSA International Conference and Proceedings	4	1	3,7	R	PU	18
D6	Website and Related Multimedia Services	5	1	6	O	PU	18
D7	Database and implementation methodology	6	1	16	D, P	CO	18
			TOTAL	184,75			

7.5 Work package description

Work package number	1.1			Start date or starting event:												0																							
Work package Title	Comprehensive inventory and assessment of existing knowledge on sustainable agriculture																																						
Activity Type	Support Action																																						
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35									
Person- months per Participant	2.5	1.5	0.5	2	2	2	4	3		2	3	3.5	3	2	2	2	1	2	3	2	3	2	1	3	2	2	5	2	0.1	3									

Objectives

Comprehensive inventory and assessment of existing knowledge on sustainable agriculture in each platform.

Except for partner 12, all other partners participate in this work package. High participation in term of person/month is that of teams from countries or regions that has accumulated / are accumulating more knowledge on sustainable agriculture and/or where synthesis have not made before or need to be updated.

The work to be achieved by all the participants to this package is described here after. Platforms Co-ordinators are responsible for the achievement of the whole package within their respective platforms.

Description of work

The work consists successively of i)-an inventory of existing results and ongoing studies, research and on-farm experiences dealing with sustainable agriculture or with alternatives to conventional agriculture; ii)-Critical analysis of the inventory results and synthesis. This will take the following points into account in particular:

- Conditions of obtaining of results:
 - Kind of material, duration and objectives targeted: basic/applied research, farmers' initiatives, mixed researchers/farmers initiatives, etc.;
 - Approach used in performance (site research, on-farm, research or participatory/stakeholder approach, etc.);
 - Biophysical conditions (climate, soil – typology and properties data, known constraints, etc.);
 - Cropping systems and technologies used (crops, varieties, rotation, rainfed or irrigated conditions, tillage/no tillage, inputs –chemicals, manure and waste, weed and pest management, etc.);

- Successes and failures related to the objectives targeted.
- Significance of the knowledge generated:
 - Scientific and practical added value of results obtained notably in the fields of: soil bio-reactivity recovery, enhancement and use, water use efficiency, ecophysiology of cover-crops including allelopathy processes, phytoremediation, the role of mulch, suitable crop management, weed and pest management; understanding and management of ecosystems;
 - Conditions of extrapolation of results;
 - Complementary research required.
- Assessment of the impacts of the knowledge and technologies generated in terms of benefits and risks (externalities):
 - Socio-economic impacts: profitability, labour, investments, yields, food quality, savings, the gender issue, etc.;
 - Environmental impacts: carbon stratification and sequestration, nitrogen and nutrient cycling, external inputs, the pattern of heavy metals and organic pollutants, the water cycle and water quality, erosion mitigation, etc.
- Conclusion and proposals in terms of:
 - Technical changes;
 - Innovation processes;
 - Economic viability;
 - Environmental impacts;
 - Multipurpose role of agriculture;
 - Policy.

Deliverables

Starting and first intermediate reports of the CMU.

Milestones and expected result

Starting meeting of CMU for the organisation of the work within the platforms (month 0);

Intermediate meeting of the CMU for the monitoring of the development of the WP at month 3.

Continuation

Work package number	2.1				Start date or starting event:												6																			
Work package Title	First platforms' meeting to validate the WP1.1 draft reports																																			
Activity Type	Support Action																																			
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35						
Person-months per Participant	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1		0.1						

Objectives

Validation of the content and conclusions of the assessment work package (1.1) report.

Partners will be represented by 1, 2 or 3 participants according to the importance in number of the teams. 0,4 p/m means 3 participants plus the co-ordinator.

Description of work

The participants of a platform will meet during 3 days to validate the report of their platform. Heading of the reports should reflect the work as described in the WP1.1.

Deliverables

Platform Assessment Reports (4 reports): R1.1, R1.2, R1.3 and R1.4

Milestones and expected result

First meeting for the validation of the respective platforms reports. (Month 6).

Continuation

Work package number	1.2					Start date or starting event:										6,5																			
Work package Title	Learning from platforms' reports																																		
Activity Type	Support Action																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant	2.2	1	0.5	1	1	2	0.5	1	1	1	1	2	2	1	1	1	0.5	1	2	1	2	1	1	2	1	1	2	1	0.2	1.5					

Objectives

Each platform learns from the assessment reports of the 3 others platforms in order to improve the overview of sustainable agriculture through comparative critical analysis.

The work to be achieved by all the participants to this package is described here after. Platforms Co-ordinators are responsible for the achievement of the whole package within their respective platforms.

Description of work

In each platform, all the assessment reports will be subjected to critical analysis focusing on the matching of the biophysical and socio-economic conditions, the technologies/approaches used and the impacts reported.

Learning from the experience of all the platforms will help to refine the acquired knowledge and to focus on alternative technologies and approaches adapted to site-specific, local and regional conditions as well as related research items and approaches. The work will address:

- The local and regional socio-economic and biophysical features of the platforms as well as policy opportunities and constraints regarding the shifting from conventional agriculture to sustainable agriculture;
- Suitable alternative technologies and approaches to the platform conditions and suggestion of ways for their implementation-improvement;
- Socio-economic, cultural and policy conditions necessary for their adoption by farmers;

- Proposals for appropriate local and regional policy if needed;
- Gaps to be filled;
- Refined research topics and conditions and approaches for their implementation.

Deliverables

Second intermediate report of the CMU meeting.

Milestones and expected result

First meeting of the Steering Committee at month 7,5.

Intermediate meeting of the CMU for the monitoring of the WP development at month 8.

Continuation

Work package number	2.2				Start date or starting event:										9,5																				
Work package Title	Second platforms' meeting to validate the WP1.2 draft reports																																		
Activity Type	Support Action																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1		0.1				

Objectives

Validation of the regional comparative critical analysis report focusing on the adequacy between the agro-ecological conditions, the technologies/approaches used and the impacts.

Partners will be represented by 1, 2 or 3 participants according to the importance in number of the teams. 0,4 p/m means 3 participants plus the co-ordinator.

Description of work

In each platform, the participants involved will meet to discuss and validate the regional comparative critical analysis report. Heading of the reports should reflect the work as described in the WP 1.2.

Deliverables

Platform Comparative Critical Analysis Reports (4 reports): R2.1, R2.2, R2.3 and R2.4

Milestones and expected result

Second meeting for the validation of the respective platforms reports. (Month 9,5).

Continuation

Work package number	1.3					Start date or starting event:										10																			
Work package Title	Refining platforms' findings																																		
Activity Type	Support Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant	2	1	0.5	1	1	2	0.5	1	1	1	1	2	2	1	1	1	0.5	1	2	1	2	1	1	2	1	1	2	1	0.3	1.5					

Objectives

Refining platform findings: identification of prospects for sustainable agriculture.

The work to be achieved by all the participants to this package is described here after. Platforms Co-ordinators are responsible for the achievement of the whole package within their respective platforms.

Description of work

In each PF, all the comparative critical analysis reports (work package 2.2) will be synthesised, focusing on the appropriateness of platform conditions, constraints and opportunities, alternative technologies and approaches, their expected adoption and impacts as well as gaps and research topics needing complementary investigation.

This will lead to concrete proposals related to perspectives for sustainable agriculture in each platform, including:

- The best situations and conditions where alternative practices, technologies and approaches in support of sustainable agriculture are likely to succeed within the platform;
- Alternative technologies and approaches in support of sustainable agriculture and the ways of adopting, implementing, disseminating and improving them;
- Socio-economic and environmental impacts and externalities expected;
- Research items to be tackled and related approaches.

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Deliverables

Third intermediate report of the CMU meeting.

Milestones and expected result

Intermediate meeting of the CMU for the monitoring of the WP development at month 11,5.

Continuation

Work package number	2.3					Start date or starting event:										13																			
Work package Title	Third platforms' meeting to validate WP1.3 draft reports																																		
Activity Type	Support Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1			0.1				

Objectives

Validate the matching of platform conditions, constraints and opportunities, alternative technologies and approaches, their expected adoption and impacts as well as gaps and research topics needing complementary investigation.

Partners will be represented by 1, 2 or 3 participants according to the importance in number of the teams. 0,4 p/m means 3 participants plus the co-ordinator.

Description of work

The participants of the platforms will meet to discuss and validate their report on the prospects for sustainable agriculture. Reports headings should reflect the work described in the WP 1.3.

Deliverables

Platform Reports on the Prospects of Sustainable Agriculture Development (4 reports): R3.1, R3.2, R3.3 and R3.4.

Milestones and expected result

Third meeting for the validation of the respective platforms reports. (month 13).

Continuation

Work package number	3				Start date or starting event:										13,5																				
Work package Title	Discussion, synthesis and validation of KASSA results																																		
Activity Type	Support Action																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant	2.2	1.1											1.1								1.1				1.1			1.1							

Objectives

Discussion, synthesis and validation of KASSA conclusions and recommendations.

Description of work

Platforms reports R3.1, R3.2, R3.3 and R3.4 will be discussed and synthesised by the CMU via the KASSA Website, from month 13,5 to month 15,5 . At the same time, Central co-ordination prepares a draft document highlighting the refined findings of KASSA that will be submitted to Steering Committee. A meeting will then take place at month 15,5; gathering the CMU and the Steering Committee and that discuss and validation the final KASSA report.

The Steering Committee makes to the Central Co-ordination recommendations regarding the preparation and the organisation of the international Conference.

Deliverables

KASSA Final Report.

Milestones and expected result

Final KASSA meeting gathering the CMU and the Steering Committee. Month 15,5.

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Continuation

Work package number	4				Start date or starting event:										15,5																				
Work package Title	Preparation and organisation of KASSA international conference																																		
Activity Type	Support Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1		0.1		

Objectives

Since month 15,5, the Central Co-ordination starts the preparation of the international conference that will take place at month 17,5. The conference to be attended by the participants, CMU and SC included, plus invited personalities from countries involved in KASSA and, EC/EU representatives.

Publication of the KASSA final report.

The Conference will address the perspectives for sustainable agriculture and future research actions. It will deliver:

1. Lessons gained from past researches on sustainable agriculture in diverse climatic zones (Boreal; temperate; Mediterranean semi-arid, tropical arid and humid) in relation to soil typology and land uses, cropping systems, socio-economic and cultural conditions and their synthesis in term of ecosystems management. Main technological and scientific knowledge acquired as well as the main constraints and known externalities will be emphasized.
2. The ways and the means that help to ensure the shift from conventional to sustainable agriculture, emphasizing the European case;
 - Main technologies and approaches appropriate for site/local/regional constraints and opportunities, and suitable ways of adopting, improving and disseminating them;
 - Main impacts and externalities expected and means of mitigation;
 - Main market and policy barriers and ways to overcome them.

The prospects for future research actions in Europe: research activities, topics and approaches in support of sustainable agriculture in Europe and in the world.

Deliverables

Conference proceedings.

Milestones and expected result

KASSA international conference

Among expected results there are:

- Perspective for sustainable agriculture and future research actions.
- Contribution to defining pathways and tools able to orient European policy on the development of sustainable agriculture.

Continuation

Work package number	5					Start date or starting event:													0																
Work package Title	KASSA website and related multimedia services																																		
Activity Type	Support Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant	6																																		

Objectives: Create a Website and related multimedia services aiming at facilitating exchange of experience between KASSA members and external dissemination.

The WP is under the responsibility of the Central Co-ordination.

KASSA website official operating language is English. All the platforms' reports and material feeding the website as well as the database should be provided in English. Consortium partners are highly recommended to translate into their own languages the relevant issues of KASSA in order to allow and encourage their local use in different countries participating and beyond them. Translated material will be displayed directly by KASSA website; in case of impossibility e.g. due to non-solved software problems, CMU will help so that the translated material will be displayed by the partners' websites. In all cases, links should be put between KASSA website and partners' websites.

Description of work

Development of a website and operating this and related multimedia services in support of KASSA achievements and beyond; providing a comprehensive, attractive and reliable information system adapted to various target groups: researchers and scientists, farmers, extensionists, teachers, students, civil society representatives and policy-makers. It will be hinged on:

- Sharing results of the KASSA project.
- Monitoring, assessing and making links between reliable documents: information, decisions and advice related to sustainable agriculture from various sectors, e.g. basic and applied research, economics, agriculture, environment and policy.
- Displays, PDF documents, slide shows, theses and reports, summaries, photographs, videos ready for immediate use from consortium members and other linked sources.

- Developing, improving and maintaining a free access media-com system service based on the use of recent software and progressive technologies such as the XML language, PHP, Scalable Vector Graphics tools and other appropriate software.
- Providing continuous information updating system and technical assistance for the consortium members to enable easier web access and exchanges.

Deliverables:

Web site operating,

Self-learning/improvement, free access, easy to use, adapted to target groups, devoted to the expansion of sustainable agriculture.

CD-ROM production and dissemination.

Milestones and expected result

Design of the Website at the time of the first CMU meeting, month 0.

Operating KASSA website, month 1.

Development of the potential of the database system and its adaptation to external uses (month 16)

Continuation

Work package number	6					Start date or starting event:										0																			
Work package Title	KASSA database and implementation methodology																																		
Activity Type	Support Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant	6	1	1					1	2		1.5		1.5	1									1												

Objectives: Database to support research and policymaking.

Creation of KASSA database.

The WP is under the responsibility of the Central Co-ordination. Participants to the WP have experience or knowledge needed for the design and the development of the database.

Description of work

Development of a common data base combining biophysical and socio-economic and agronomic data adapted to complex processes of: i) micro- macro agronomic and economic (diagnosis, forecast) modelling, ii) environmental multi-scale, time-related factor/condition assessment, and iii) mathematical monitoring of quantitative, qualitative or logical heterogeneous patterns.

Deliverables

Database operating and implementation methodology.

Milestones and expected result

- Designing a conceptual framework shared by farmers, professionals, agronomists, economists, sociologists, environmental specialists and policymakers. Month 2.

- Developing a pilot prototype combining *in situ* experimental schemes, the database framework and the flexible realistic modelling components. Month 6.
- Improving the methodology through a permanent participatory brainstorming and assessment process. Month 12.
- Adapting the database modelling associated prototype system to the 4 platforms and encouraging the validation of system accuracy and acceptability through the implementation of case studies. Month 16.
- Providing, beyond the achievements of KASSA, the opportunity to train end-users and to develop regional capacity for self-maintenance by scientific staffs with the support of the KASSA web site. Month 18.

Expected results: key points of agriculture sustainability conditions enabling the construction of prospective scenarios in order to orient policy-makers and agricultural stakeholders' decisions in Europe.

Continuation

Work package number	7.1				Start date or starting event:														0																
Work package Title	Co-ordination of the European platform																																		
Activity Type	Management Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant		3																																	

Objectives

Co-ordination of the European platform.

The Co-ordinator manages the activity within the platform and is responsible for the work and tasks related to work packages in respect to the established milestones and deliverables.

He is individually responsible for the management and for the timing and fine-tuning of his platform's activities. He facilitates and develops activity agendas within the platform. He is responsible for the management of the 3 platform's workshops including their preparation and attending, the validation of the related reports and for the finalisation of deliverable outputs.

In accordance with the CMU and in respect to avoid duplication, He can distribute specific tasks between the platforms' participants.

Description of work

Facilitation for participants in the European platform and maintaining close contact with the central co-ordination;

Planning and organising the 3 validation meetings and finalizing the 3 platform reports;

Taking part in the preparation of the KASSA report and in its validation meeting (WP 3);

Taking part in KASSA international conference;

Taking part in CMU starting and intermediate meetings.

Deliverables

European platform reports R1.1, R2.1 and R3.1.

Milestones and expected result

European platform first meeting, month 7;

European platform second meeting, month 10;

European platform third meeting, month 14;

KASSA final meeting, month 16;

KASSA international conference, month 18

CMU starting and intermediate meetings, months 1, 3, 9, 12.

Continuation

Work package number	7.2				Start date or starting event:										0																				
Work package Title	Co-ordination of the Mediterranean platform																																		
Activity Type	Management Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant													3																						

Objectives

Co-ordination of the Mediterranean platform.

The Co-ordinator manages the activity within the platform and is responsible for the work and tasks related to work packages in respect to the established milestones and deliverables.

He is individually responsible for the management and for the timing and fine-tuning of his platform's activities. He facilitates and develops activity agendas within the platform. He is responsible for the management of the 3 platform's workshops including their preparation and attending, the validation of the related reports and for the finalisation of deliverable outputs.

In accordance with the CMU and in respect to avoid duplication, He can distribute specific tasks between the platforms' participants.

Description of work

Facilitation for participants to the Mediterranean platform and maintaining close contact with the central co-ordination;

Planning and organising the 3 validation meetings and finalizing the 3 platform reports;

Taking part in the preparation of the KASSA report and in its validation meeting (WP 3)

Taking part in KASSA international conference;

Taking part in CMU starting and intermediate meetings.

Deliverables

Mediterranean platform reports R1.2, R2.2 and R3.2.

Milestones and expected result

Mediterranean platform first meeting, month 7;

Mediterranean platform second meeting, month 10;

Mediterranean platform third meeting, month 14;

KASSA final meeting, month 16;

KASSA international conference, month 18

CMU starting and intermediate meetings, months 1, 3, 9, 12.

Continuation

Work package number	7.3					Start date or starting event:										0																			
Work package Title	Co-ordination of the Asian platform																																		
Activity Type	Management Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant																					3														

Objectives

Co-ordination of the Asian platform

The Co-ordinator manages the activity within the platform and is responsible for the work and tasks related to work packages in respect to the established milestones and deliverables.

He is individually responsible for the management and for the timing and fine-tuning of his platform's activities. He facilitates and develops activity agendas within the platform. He is responsible for the management of the 3 platform's workshops including their preparation and attending, the validation of the related reports and for the finalisation of deliverable outputs.

In accordance with the CMU and in respect to avoid duplication, He can distribute specific tasks between the platforms' participants.

Description of work

Facilitation for participants to the Asian platform and maintaining close contact with the central co-ordination;

Planning and organising the 3 validation meetings and finalizing the 3 platform reports;

Taking part in the preparation of the KASSA report its validation meeting (WP 3);

Taking part in KASSA international conference;

Taking part in CMU starting and intermediate meetings.

Deliverables

Asian platform reports R1.3, R2.3 and R3.3.

Milestones and expected result

Asian platform first meeting, month 7;

Asian platform second meeting, month 10;

Asian platform third meeting, month 14;

KASSA final meeting, month 16;

KASSA international conference, month 18

CMU starting and intermediate meetings, months 1, 3, 9, 12.

Continuation

Work package number	7.4					Start date or starting event:													0																
Work package Title	Co-ordination of the Latin American platform																																		
Activity Type	Management Activity																																		
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35					
Person-months per Participant																								3			3								

Objectives

Co-ordination of the Latin American platform

The platform two Co-ordinators manage closely the activity within the platform and are responsible for the work and tasks related to work packages in respect to the established milestones and deliverables.

The two Co-ordinators are individually responsible for the management and for the timing and fine-tuning of their platform's activities. They facilitate and develop activity agendas within their platforms. They are responsible for the management of the 3 platform's workshops including their preparation and attending, the validation of the related reports and for the finalisation of deliverable outputs.

In accordance with the CMU and in respect to avoid duplication, the co-ordinators can distribute specific tasks between the platforms' participants.

Description of work

Facilitation for participants in the Latin American platform and maintaining close contact with the central co-ordination;

Planning and organising the 3 validation meetings and finalizing the 3 platform reports;

Taking part in the preparation of the KASSA report and in its validation meeting (WP 3);

Taking part in KASSA international conference;

Taking part in CMU starting and intermediate meetings.

Deliverables

Latin American platform reports R1.4, R2.4 and R3.4.

Milestones and expected result

Latin American platform first meeting, month 7;

Latin American platform second meeting, month 10;

Latin American platform third meeting, month 14;

KASSA final meeting, month 16;

KASSA international conference, month 18

CMU starting and intermediate meetings, months 1, 3, 9, 12.

Continuation

Work package number	8				Start date or starting event:										0																					
Work package Title	Central Co-ordination of KASSA																																			
Type of Activity	Management Activity																																			
Participant ID	1	2	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	34	35						
Person-months per Participant	6																																			

Objectives

KASSA Central Co-ordination.

The Central Co-ordinator is responsible for the management strategy of the project and its full implementation according to the established milestones and, is accountable to the European Commission. CIRAD is the legal entity representing the Consortium and acts on behalf of the Consortium in between meetings for tasks delegated to it, and for external representation.

He reports to the Consortium through the CMU and is responsible for global coherence of the project, coordination and integration across the platforms and work packages, the quality and relevance of the deliverables and the monitoring of KASSA progress.

He is responsible for the operational organisation and the achievement of the meeting that validates KASSA final results as well as for the operational organisation and management of the international closing conference and its proceedings.

Description of work

Providing the necessary facilitation for platforms in order to ensure the completion of all the tasks in the scheduled time.

Developing and operating the web site and the database and finalizing the related deliverables.

Ensuring the general coherence of the project as well as the relevance of the deliverables.

Planning and organising the KASSA report validation meeting (WP3) and finalizing the KASSA final report.

Planning and organising the international conference and publication of the proceedings

Deliverables

KASSA final report;
International Conference proceedings;
Web site and related services;
Database and implementation methodology.

Milestones and expected result

- Design of the Website at the time of the first CMU meeting, month 1;
- Operating KASSA website, month 1;
- Designing a conceptual framework shared by farmers, professionals, agronomists, economists, sociologists, environmental specialists and policymakers. Month 2;
- Developing a pilot prototype combining *in situ* experimental schemes, the database framework and the flexible realistic modelling components. Month 6;
- Improving the methodology through a permanent participatory brainstorming and assessment process. Month 12;
- Development of the potential of the database system and its adaptation to external uses (month 16);
- Adapting the database modelling associated prototype system to the 4 platforms and encouraging the validation of system accuracy and acceptability through the implementation of case studies. Month 16;
- KASSA results validation meeting. Month 16;
- Providing, beyond the achievements of KASSA, the opportunity to train end-users and to develop regional capacity for self-maintenance by scientific staffs with the support of the KASSA web site. Month 18;
- KASSA International Conference. Month 18.
- CMU starting and intermediate meetings. Months 1, 3, 9, 12;
- Steering Committee meetings. Months 8, 16, 18.

8. Project resources and budget overview

8.1 Effort for the project

Specific Support Action Effort Form in “person months” for the full duration of the project

Project number (KASSA): 505582

	CIRAD	INRA	FNACS	KVL	FIU	JLU	TOTAL PARTNERS
Support activities							
WP 1.1	2.5	3	0.5	2	2	2	12
WP 1.2	2.2	1	0.5	1	1	2	7.7
WP 1.3	2	1	0.5	1	1	2	7.5
WP 2.1	0.4	0.2	0.1	0.1	0.1	0.1	1
WP 2.2	0.4	0.2	0.1	0.1	0.1	0.1	1
WP 2.3	0.4	0.2	0.1	0.1	0.1	0.1	1
WP 3	2.2	1.1					3.3
WP 4	0.4	0.2	0.1	0.1	0.1	0.1	1
WP 5	6						6
WP 6	6	1	1				8
Total support activities	22.5	7.9	2.9	4.4	4.4	6.4	48.5
Management activities							
WP 7.1		3					3
WP 7.2							0
WP 7.3							0
WP 7.4							0
WP 8	6						6
Total management	6	3	0	0	0	0	9
TOTAL ACTIVITIES							

Continuation

	ZALF-e.V	NCRI	ENL	EAU	VURV	NSC- ISSAR	TOTAL PARTNERS
Support activities							
WP 1.1	4	3		2	3	3.5	15.5
WP 1.2	0.5	1	1	1	1	2	6.5
WP 1.3	0.5	1	1	1	1	2	6.5
WP 2.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6
WP 2.2	0.1	0.1	0.1	0.1	0.1	0.1	0.6
WP 2.3	0.1	0.1	0.1	0.1	0.1	0.1	0.6
WP 3							0
WP 4	0.1	0.1	0.1	0.1	0.1	0.1	0.6
WP 5							0
WP 6		1	2		1.5		4.5
Total support activities	5.4	6.4	4.4	4.4	6.9	7.9	35.4
Management activities							
WP 7.1							0
WP 7.2							0
WP 7.3							0
WP 7.4							0
WP 8							0
Total management	0	0	0	0	0	0	0
TOTAL ACTIVITIES							

Continuation

	CSIC	UdL	ITA	INIA	ITGA	INRA-Morocco	TOTAL PARTNERS
Support activities							
WP 1.1	3	2	2	2	1	2	12
WP 1.2	2	1	1	1	0.5	1	6.5
WP 1.3	2	1	1	1	0.5	1	6.5
WP 2.1	0.2	0.1	0.1	0.1	0.1	0.1	0.7
WP 2.2	0.2	0.1	0.1	0.1	0.1	0.1	0.7
WP 2.3	0.2	0.1	0.1	0.1	0.1	0.1	0.7
WP 3	1.1						1.1
WP 4	0.2	0.1	0.1	0.1	0.1	0.1	0.7
WP 5							0
WP 6	1.5	1					2.5
Total support activities	10.4	5.4	4.4	4.4	2.4	4.4	31.4
Management activities							
WP 7.1							0
WP 7.2	3						3
WP 7.3							0
WP 7.4							0
WP 8							0
Total management	3	0	0	0	0	0	3
TOTAL ACTIVITIES							

Continuation

	CIC	NAGREF	CIMMYT- RWC	CASA	VASI	IAPAR	TOTAL PARTNERS
Support activities							
WP 1.1	3	2	3	2	1	3	14
WP 1.2	2	1	2	1	1	2	9
WP 1.3	2	1	2	1	1	2	9
WP 2.1	0.1	0.1	0.2	0.1	0.1	0.2	0.8
WP 2.2	0.1	0.1	0.2	0.1	0.1	0.2	0.8
WP 2.3	0.1	0.1	0.2	0.1	0.1	0.2	0.8
WP 3			1.1			1.1	2.2
WP 4	0.1	0.1	0.2	0.1	0.1	0.2	0.8
WP 5							0
WP 6					1		1
Total support activities	7.4	4.4	8.9	4.4	4.4	8.9	38.4
Management activities							
WP 7.1							0
WP 7.2							0
WP 7.3			3				3
WP 7.4						3	3
WP 8							0
Total management	0	0	3	0	0	3	6
TOTAL ACTIVITIES							

Continuation

	FAEPE	UFG	EMBRAPA	ANAPO	CIMMYT INT	AAPRESID	TOTAL PARTNERS
Support activities							
WP 1.1	2	2	5	2	0.1	3	14.1
WP 1.2	1	1	2	1	0.2	1.5	6.7
WP 1.3	1	1	2	1	0.25	1.5	6.75
WP 2.1	0.1	0.1	0.2	0.1		0.1	0.6
WP 2.2	0.1	0.1	0.2	0.1		0.1	0.6
WP 2.3	0.1	0.1	0.2	0.1		0.1	0.6
WP 3			1.1				1.1
WP 4	0.1	0.1	0.2	0.1		0.1	0.6
WP 5							0
WP 6							0
Total support activities	4.4	4.4	10.9	4.4	0.55	6.4	31.05
Management activities							
WP 7.1							0
WP 7.2							0
WP 7.3							0
WP 7.4			3				3
WP 8							0
Total management	0	0	3	0	0	0	3
TOTAL ACTIVITIES	59.1	31.5	37.5	22	18.65	37	205.75

8.2 KASSA consortium critical mass

All the institutions involved in KASSA are skilled and recognised in their field of activity. Their complementarity and the critical mass they form vouch for the success of KASSA. The description of the whole partners of KASSA is detailed in the appendix A1; in this part, only main features related to non-public partners of the consortium are emphasized.

KASSA consortium is made up of 28 contractors totalizing 31 teams¹ that belong to 28 institutions from 18 countries, which have authority and capacity to conduct activities planned within the KASSA Specific Support Action (table 4). Among the participants:

20 contractors are governmental public organisations acting in the fields of high education, research and development.

08 contractors are private organisations acting in research and development; mainly in education, training and, extension. From this number:

- **1** (CIMMYT INT) is a non-profit autonomous international agency devoted to agricultural research and development and operating as an integral part of the Consultative Group on International Agricultural Research-CGIAR. CYMMYT INT participates in KASSA through two programmes: The Intensive Agroecosystems Programme/Rice and Wheat Consortium for South Asia –India and, the Tropical Ecosystems Programme - Mexico.
- **1** (ENL) is a multidisciplinary SME network consultancy with particular expertise in research and development and, management in the environmental, social and economic fields.
- **1** (CIC) is an NGO led by scientists, acting in the field of development at international, regional and local levels, mainly in the fields of sustainable agriculture, food security and poverty alleviation. It operates in close collaboration with farmers and research community; and the general stakeholders, participates in the carrying out of field researches and, is involved in knowledge dissemination, education and training and, stakeholders approach.
- **2** (CASA, FAEPE) are scientist NGOs working mainly in the field of education, training and extension.
- **3** (FNACS, ANAPO and AAPRESID) are farmers NGOs that collaborate with research community to develop on field experiments, improve and disseminate agricultural technologies and systems in support of sustainable agriculture. Especially ANAPO and AAPRESID have a long experience in conducting on-field trials in close collaboration with national and international research and development organisms, publishing their results and contributing to disseminate knowledge through regular training, trials, field-tours and, publications.

The participation of non-public organisations, mainly NGOs, is of high importance for the development of KASSA and the quality of its findings. They act as complementary to institutional research teams and constitute an active interface towards the end-users, the policy-making and the whole society. From one hand, their on-field experience and knowledge will strengthen the process of knowledge generation and validation as well as the calibration of the hypotheses for future researches. On the other hand, they will play a relevant role in sharing KASSA outcomes notably through their wide dissemination, targeting especially the end-users, the policy makers and raising awareness of the society. Participation of NGOs should be regarded as an originality of KASSA.

8.3 KASSA and gender issues

There was no restriction in the construction of the consortium of KASSA however; the participation of ladies in KASSA does not exceed 15%: 2 ladies in the European platform (Denmark and

¹ Each of the contractors 6, 16 and 24 participate in KASSA with two teams.

Germany); 1 lady in the Mediterranean platform (Spain); 1 lady in Latin American platform (Brazil) who is also a platform co-ordinator. We do not have any explanation to this weak involvement of the women in the project, if it is not the weak involvement of the women in the institutional teams working on this field of research. But, the involvement of the NGOs in KASSA could palliate this insufficiency.

8.4 Overall budget for the project (CPF forms A3.1 & A3.2)

The overall budget of KASSA is about € 900,000.00. The total EC requested contribution is € 750,000.00. About 6 % of the grant is allocated to management activities, and about 94 % to specific activities. The Table 4 and the figure 6 show the major features of the repartition of the budget and the distribution of the EC contribution between platforms, countries and partners according to their status. The main beneficiaries of the EC grant are governmental non-commercial research organisation in European countries.

Table 4. Repartition of the KASSA budget (€) between platforms and teams

Teams involved		Specific Activities		Support Activities				
Legal Status	Number	Total Eligible Costs	Ec contribution	Total Eligible Costs	Ec contribution			
European platform								
GOV/C	1	271350	191800	45000	12000	316350	203800	27
GOV/NC	9	232549	204900	22500	6000	255049	210900	28
PRIV/C	1	31500	31500	0	0	31500	31500	4
PRIV/NC	1	8400	8400	0	0	8400	8400	1
SUB TOTAL	12	543799	436600	67500	18000	611299	454600	61
Mediterranean platform								
GOV/NC	8	111100	111100	6000	6000	117100	117100	16
PRIV/NC	1	17400	17400	0	0	17400	17400	2
SUB TOTAL	9	128500	128500	6000	6000	134500	134500	18
Asian platform								
GOV/NC	1	12000	12000	0	0	12000	12000	2
PRIV/NC	2	35000	35000	6000	6000	41000	41000	5
SUB TOTAL	3	47000	47000	6000	6000	53000	53000	7
Latin American platform								
GOV/NC	3	58000	58000	12000	12000	70000	70000	9
PRIV/NC	4	37900	37900	0	0	37900	37900	5
SUB TOTAL	7	95900	95900	12000	12000	107900	107900	14
TOTAL	31	809200	708000	91500	42000	900700	750000	
% of the Total EC Contribution			94		6			
UE Countries	17	598052	490850	73500	24000	671552	514850	69
AC Countries	2	38499	38500	0	0	38499	38500	5
INTAS Countries	1	20749	20750	0	0	20749	20750	3
INCO Countries	11	157906	157900	18000	18000	175906	175900	23

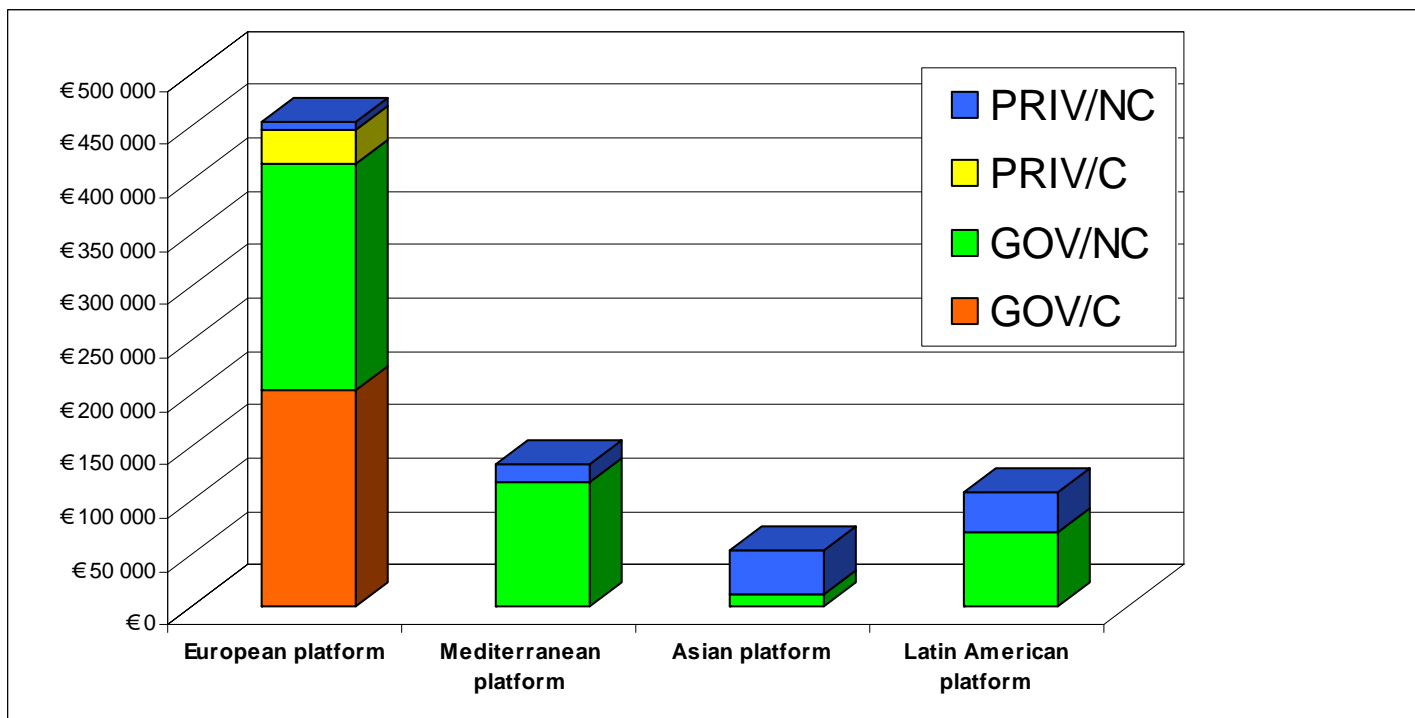


Figure 6. Distribution of the EC Contribution over KASSA platforms and partners