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<th>Dissemination Blueprint: The FLAIR-FLOW Experience</th>
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The FLAIR-FLOW system

The FLAIR-FLOW information system has spanned the years 1991-2000 as three sequential three-year projects and has disseminated information from the EU FLAIR, AAIR and FAIR food RTD programmes, and also from some of the COST programmes dealing with food. Initially it operated in 14 European countries, but currently serves 19 countries (see Table 1), and was set up in view of the perceived difficulty in reaching food SMEs and other end-users with 'usable' food R&D results. A proposal to the EU for a new dissemination project (2001-2003) has been successful and so FLAIR-FLOW will continue in the new millennium. The co-ordinator of the new project will be J.F. Quillien (see Table 1). The FLAIR-FLOW team gained valuable experience in dissemination techniques over the last nine years and a consensus of the team is related here in the context of a critical appraisal of a network-based dissemination system. This dissemination blueprint complements an earlier (1994) blueprint (F-FE 115/94) which focused on the core elements of dissemination.

Information transfer

The routes for information transfer (Fig. 1) are: (i) 1-page technical documents (three issues per month) in user-friendly language on research results; (ii) their reproduction on the internet; (iii) their reproduction in trade, popular, and scientific journals Europe-wide; (iv) FLAIR-FLOW workshops on results from EU-supported food research programmes; and (v) lectures and poster presentations by FLAIR-FLOW network personnel at conferences, trade shows, and related events. The targeted end-users are small to medium sized enterprises (SMEs), health professionals (HPs) and consumer groups (CGs).

A network-based system

FLAIR-FLOW is based on 19 national networks each with a network leader, and network members. This approach has a number of advantages: (i) national networks are dynamic and generate action in each country; (ii) the presence of a network leader means that FLAIR-FLOW has an active organiser or representative in each country; (iii) network members assist in national dissemination and some have been extremely active and have excellent contacts with the grass roots of the food industry; (iv) a network approach greatly facilitates management of the overall project (see below). The consensus is, therefore, that a system of national networks is an excellent structure for an international dissemination project. The selection of the national network leader and network members is a critical first step, as is a six-monthly assessment of network performance accompanied by a 'replacement procedure' for unsatisfactory performers. The tendency (over the nine-year period) is for national networks to become smaller, i.e. the high performers 'consolidate' while the less active 'drop-out'.

The 1-pagers

The use of 1-page technical documents as a dissemination route was a strategic decision made at the start of the FLAIR-FLOW project. To date, over 350 have been written, and circulated to end-users Europe-wide. The 1-pagers have continued throughout the nine years of the project despite the coming-on-stream of the electronic age as it is considered that a well presented hard copy is still the most 'penetrating' route by which to reach SME end-users. The 1-pagers have received many plaudits and criticisms from end-users over the last nine years and it is difficult to write the 'perfect' 1-pager. The consensus is that the 1-pager approach should be retained in the new project with more focus on targeting for different end-users, e.g. food SMEs, health professionals and consumer groups. Language may also be a major barrier in some countries (see below).

The internet

All the 1-page documents are on the FLAIR-FLOW website:
(http://www.exp.ie/flair.html) in English but are also available in French:
(http://www.inra.fr/CRIAA/flair-flow/F-FE.htm)
A recent FLAIR-FLOW SME survey using a prompted question 'do you use the internet to source technical information' evoked a positive response of 55%. The consensus of the FLAIR-FLOW team is that the internet will play an ever-increasing role as an information source for food SMEs; however, the sheer volume of material on the internet coupled with the difficulty of locating the required information may prove an impediment.

**Journal 'power'**

Many of the 1-page documents are reproduced in journals Europe-wide, and to date there are over 4000 such publications. Those in trade journals are particularly relevant as this is a good route to food SMEs. The term 'journal power' was coined in view of the potential of this route to reach a very large number of end-users; this is easily calculated from the circulation lists for the journals multiplied by the number of issues per annum. The consensus is that journal editors should be strongly encouraged to reproduce the 1-pagers 'as is', or in shortened form, on a regular basis. This is a function of the national network leaders. Many of the reproduced articles are in the language of the country which is an added advantage.

**Workshops**

Workshops are seen as an excellent dissemination route to SMEs as they bring the researchers and end-users into contact; with careful planning they are also major vehicles for technology transfer and innovation. To date, over 200 FLAIR-FLOW workshops have been held and most of these have handout material. (ready-to-use European research) workshops have been particularly successful for reaching the smaller food companies and extensive near market results have been presented in user-friendly form both verbally and as technical manuals (see recent publications below). Attendee opinion re topics for EU-supported food R and D was obtained using questionnaires. The workshops are organised by the network leaders while speakers are co-ordinators of EU food R and D projects, and also national experts from research establishments and from industry. One of the work­shops took the approach of training the trainers (see special initiatives below) as a route to overcoming language barriers and to achieving a regional spread of the results. The consensus is that a workshop programme is an integral, indispensable part of an international dissemination programme.

**Quantification**

The decision at the outset to include a 'quantification of feedback' element in FLAIR-FLOW proved valuable. Over 12,000 enquiries for follow-up information have been obtained from SME end-users with 11,000 enquiries from other sources. Internet files opened on the project website were in excess of 120,000. While it is virtually impossible to achieve 100% quantification, the consensus is that quantification confers an extra sense of reality to the project and can be used (i) as an index of network leader
performance; (ii) as an index of research area popularity, i.e. the most 'requested' projects for follow-up information to the 1-pagers; and (iii) as a deliverable against which network leaders are paid, i.e. a performance based approach.

Platform of food SMEs

A platform of circa 300 food SMEs was introduced in 1997 as an innovative step to (i) identify SME priorities for R&D; (ii) pinpoint the issues influencing SME participation in food R&D; (iii) evaluate the disseminated material; and (iv) identify topics for workshops and handbooks. The contacts between the network leaders and platform members were written, verbal, and in most cases, a combination of both.

Information was obtained from the platform every six months using a questionnaire, and about 205 of the companies are currently active. Of these, 92% are SMEs with circa 4.5% 'larger' companies and 3.5% very large companies. Bakeries (17%) predominate while meat, ingredients, prepared consumer foods, dairy and fruit/vegetable companies have a fairly equal representation at 11-13%. This spread ensures that diversity of opinion related to company size or company product type has representation in survey results and feedback.

Platform members have been surveyed on: (i) priorities for food R&D; (ii) technical information sources; (iii) HACCP and hygiene; (iv) participation in food R and D; and (v) participation in a food residue database. The results have been collated and published in Technical Manual FFE 384/00 (see Table 2). The consensus in that a platform of food SMEs is a highly important component of a dissemination project in that SME opinion on a range of issues is canvassed on an ongoing basis and this information is used to improve the dissemination system and its outputs.

Special initiatives

The network leaders generated three special initiatives for improving dissemination; these models have potential for wider application.

- **a night fax system** was devised for Italy whereby the titles of FLAIR-FLOW 1-pagers are sent at night (cheap rate) by fax to a large number of food SMEs. They, in-turn, select the titles they require and the software sends the full 1-pagers down the line. This is very successful as it puts the network leader in contact with a large number of SMEs on an ongoing basis, is self-quantifying, and gives the SMEs 'fast' information. The system is also operated in France by the French network.

- **a food SME exchange** (as distinct from a scientist exchange) was organised by the Danish network leader whereby personnel from 15 bakeries (5 in each of Germany, Sweden and Denmark) visited each others premises and also attended technical sessions of relevance to them. This proved highly beneficial and this model has application in the seafood, specialist cheese, and other areas.
training the trainers was introduced by the French network leader to overcome the speaker language barrier in FLAIR-FLOW workshops. The RETRUE workshop on microbial control in the meat industry was delivered, in English, to 30 French veterinarians (the trainers) who then re-delivered the programme in French to end-users in a number of regions in France. This approach was very satisfactory and has application in most non-English speaking countries.

Reaching food SMEs
A number of FLAIR-FLOW initiatives/strategies have been developed/ utilised for reaching food SMEs. These include focused information, RETRUE workshops, night fax, SME exchange, food SME platform, and others, as described above. These are necessary in view of the extreme difficulty in reaching food SMEs, and especially the smaller companies, in a real way with technical information and technology transfer. The consensus is that this will be a continuing challenge as the volume of information increases, and will need dynamic remedial measures. Some other factors for success in transferring technical information to food SMEs has been highlighted by the network leaders (Table 3).

Ongoing challenges
Some of these have already been alluded to above, but five of the biggest ongoing challenges relate to the language barrier, the volume of information, follow-up information, 'programme sweeping', and resources/ finance.

- Many food SMEs do not understand English and it is imperative that they receive verbal and written information in their own language. The latter is easier to deliver and the 1-pagers are translated in some of the countries, but not in all. The presentations at workshops are more difficult to conduct in the local language although training the trainers is a partial solution. Simultaneous translation is very expensive and there is no FLAIR-FLOW budget for this which is a major deficiency that needs to be rectified in the new FLAIR-FLOW IV project.

- The volume of information from EU-supported food R&D programmes is increasing with each successive programme, e.g. FLAIR had 33 food R&D projects, AAIR about 80, and FAIR about 140. The FLAIR-FLOW system cannot deal with 140 individual projects and so selections must be made of individual projects, or groups of projects, that have the greatest potential for industrial impact. This screening/selection is a key function of the network leaders with the assistance of the consensus platforms (SMEs, health professionals, consumer groups) planned in FLAIR-FLOW IV.

- Good quality, relevant, user-friendly follow-up information to the 1-page documents is key to the success of the FLAIR-FLOW system. A FLAIR-FLOW survey in 1994 indicated that about 33% of contractors were 'unfriendly' in that they did not send follow-up information when requested to do so by end-users. This situation was addressed, but only partially solved, by the EU Commission and new systems are needed to ensure the availability of follow-up information.

- The FLAIR-FLOW team has identified 'programme sweeping' as a strategic requirement if EU food R&D outputs are to reach their full potential. The term was coined to describe the situation where the transnational EU R&D system (i.e. researchers, institutions, the EU Commission) 'marches' from one programme to the next, e.g. the focus switches to the new programme (i.e. Framework V) without 'sweeping-up' and highlighting all the outputs from the FAIR programme. FLAIR-FLOW is not equipped to deal with this deficiency and specialised programme sweepers need to be employed by the EU Commission to collate, focus, and tailor the information for the relevant end-users.

- The level of funding for FLAIR-FLOW from the EU Commission, while considerable, is still insufficient for the number of tasks that have to be performed by the network leaders in running the project. Additional funding should facilitate a more comprehensive approach and would enable extra key tasks, such as programme sweeping to be undertaken.

Recent publications
Frequent publication of project glossies and booklets has been ongoing policy in the FLAIR-FLOW project as these are needed to inform end-users of the outputs and to alert new end-users to the benefits of FLAIR-FLOW. Recent publications include a series of five technical
There are calls and the meetings. The synergy and interactions at the basis to discuss/solve leader Commission staff; this team communication and the co­ordinator visits each network to inject new directions. This frequency of meeting has been the experience international network meetings issues. The project coordinator and EU network comprising a sub-set of the smooth project management, and has a management team essential to ensure continuing dynamism and motivation; this is achieved from the synergy and interactions at the meetings. FLAIR-FLOW also has a management team comprising a sub-set of the network leaders together with the project coordinator and EU Commission staff; this team prepares the ground for the international network meetings and also meets on an ad-hoc basis to discuss/solve special issues. The FLAIR-FLOW team is electronically networked for fast communication and the co­ordinator visits each network leader once per annum (usually on the occasion of a workshop); there are also frequent phone calls between the participants. All these factors, collectively, lead to the smooth running and dynamic output of the project.

### Strategic linkages

The FLAIR-FLOW project is strategically linked to a number of organisations which aid with the dissemination effort. These include: (i) BEUC (Bureau European des Unions de Consommateurs) who circulates FLAIR-FLOW material to national consumer unions; (ii) EFAD (European Federation of Associations of Dieticians) who circulates the 1-pagers on nutritional aspects to national associations of dieticians in 22 countries; and (iii) ifis (International Food Information Service) who carries much of the FLAIR-FLOW material in Food Science and Technology Abstracts. There are also links to the International Institute of Refrigeration, to the sister dissemination projects Non-Food 2000 and AQUAFLOW, and to a range of national institutions in the different countries. The consensus is that current strategic links should be maintained/ strengthened and new ones established, as the 'piggyback' approach is a highly positive option for FLAIR-FLOW, i.e. include FLAIR-FLOW material with mailed material of other organisations.

### The FLAIR-FLOW model

This has proved highly successful and has strengthened rather than weakened with time. Its success is largely due to its simplicity of design and operation, and also in the direct approach used, i.e. its main goal is to bring researchers and end-users into person to person contact. This results in a direct message delivered on­target. The model has application for dissemination in other fields of science and the system of operation has been used successfully in the Non-Food 2000 and AQUAFLOW dissemination projects, and in dissemination projects at national level (e.g. the Non Commissioned Food Research Dissemination Project in Ireland).

### Conclusions/recommendations

- A system of national networks is an excellent structure for an international dissemination project.
- 1-page technical documents containing user-friendly R&D results are a good dissemination vehicle. However, information should be focused, and circulation targeted on an end-user basis.
- Language remains a barrier as
most SMEs require technical information in their own language. It is imperative that the EU Commission provides funds for translation.

- There is not always a ready supply of follow-up material to the 1-pagers. This weakness must be addressed urgently by the EU Commission, and a system put in place that will guarantee good quality follow-up information from the coordinators of research projects.

- The internet will play an ever-increasing role as an information source for food SMEs. However, the volume of data, and locating the required material could prove an impediment.

- Editors of trade and other journals should be encouraged to carry FLAIR-FLOW material on an ongoing basis; this is an excellent route to food companies.

- Workshops are a key component of a dissemination system. The so-called RE:EU:ER workshops are particularly beneficial for reaching the smaller companies with ready-to-use information. Workshops on training the trainers should be considered as a route to overcoming the language barrier.

- Quantification of feedback from end-users confers a sense of reality to the project and provides useful information on the most requested 1-pagers, and also on network leader performance.

- The platform of circa 300 food SMEs ensured a major industrial input to the operation and direction of FLAIR-FLOW, and also provided key data on SME opinion of R&D, dissemination routes/channels, food safety, and other issues.

- Night fax, food SME exchange, and training the trainers are three special pilot dissemination initiatives generated by the FLAIR-FLOW team. They have all proved successful and are suitable for wider application.

- Programme sweepers should be used by the EU Commission to ensure that all project results are collated for end-users. This will ensure that EU food R&D programmes reach full potential in applications and end-use terms.

- Strategic linkages with other organisations/institutions involved in dissemination are essential for FLAIR-FLOW, and such links should be maintained/strengthened and new ones established.

- The FLAIR-FLOW model is well proven and has application as a dissemination system in other fields of science.

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FLAIR-FLOW WEB-SITE
http://www.exp.ie/flair.html

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