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# Internet promotion of agroforestry networks within regional development planning

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**Abstract.** Agroforestry is the combination of trees, crops and livestock on the same area and it applies to all agricultural systems. Agroforestry activities can have a positive socio-economic impact to regional sustainable development and planning, especially in the Mediterranean where it constitutes a traditional practice. Internet promotion can play a critical role in planning strategies for regional development. The aim of this paper is to identify and retrieve Internet websites that promote agroforestry issues and to study their content characteristics. Additionally we propose a model website structure with a user-friendly environment aiming to promote agroforestry for Mediterranean areas supporting all the necessary information concerning socio-economic benefits. Through the proposed website structure, local populations can be motivated as to the preservation of agroforest ecosystems and their services and contribute to local socio-economic activities.

**Keywords.** Agroforest ecosystems – Regional Development – Sustainable development – Internet – Website.

## *La promotion via l'Internet des réseaux d'agroforesterie dans la planification du développement régional*

**Résumé.** L'agroforesterie est la combinaison entre les arbres, les cultures agricoles et le bétail sur la même zone de terre et peut être appliquée à tous les systèmes. Les activités agroforestières peuvent avoir un impact socio-économique positif sur le développement régional durable et la planification, particulièrement dans la Méditerranée où elles constituent une pratique traditionnelle. L'Internet et la promotion via l'Internet peuvent jouer un rôle essentiel dans la stratégie en ce qui concerne la perspective du développement régional. L'objectif de cet article est d'isoler et de récupérer dans les sites Internet des sujets relatifs à l'agroforesterie et d'étudier les caractéristiques de leur contenu. En plus nous proposons un modèle structurel pour un site dans un environnement convivial qui vise à promouvoir l'agroforesterie pour les zones méditerranéennes apportant toutes les informations nécessaires concernant les avantages socio-économiques. Grâce à la structure du site proposé, la population locale peut être motivée pour la préservation des écosystèmes agroforestiers et de leurs services et pour contribuer à des activités locales socio-économiques.

**Mots-clés.** Écosystèmes agroforestiers – Développement régional – Développement durable – Internet – Site web.

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## I – Introduction

Agroforestry systems are traditional land use practices that can be found both in Greece and around the world. In Greece they can be found throughout the country and are considered as an integral part of the rural landscape (ICRAF, 2011).

Information and Communication Technologies play a fundamental role in environmental protection, sustainability, education as well as in rural sustainable development (Andreopoulou, 2013); Furthermore, Internet, digital, online services and innovative applications can be used as means to achieve regional sustainable development. A business website can become a storefront and if is operated can attract and retain customers (Andreopoulou *et al.*, 2013).

The aim of this paper was to identify websites of agroforestry networks, to study their characteristics and to propose a regional website aiming to promote agroforestry in Northern Greece supporting all the necessary information.

## II – Materials and methods

Internet research was done to identify websites with information on agroforestry ecosystems and networks that promote activities related to agroforestry. An online survey was conducted using "Google", which provides acceptable results in comparison with other engines (Langville and Meyer, 2006). The retrieved websites were studied (characteristics - services) (Table 1).

**Table 1. Description of characteristics and services studied in research**

Characteristic/ Service	Description	Characteristic/ Service	Description
A1	Appearance (Badre, 2002)	A10	Browser Consistency (Ginige & Murugesan, 2001)
A2	Content (Karvonen, 2000)	A11	Effective Navigation (Ginige & Murugesan, 2001)
A3	Functionality (Duyne <i>et al.</i> , 2002)	A12	Good Error Handling (Nielsen, 1999)
A4	Website Usability (Duyne <i>et al.</i> , 2002)	A13	Usable Forms (Nielsen, 1999)
A5	Mobile Compatibility (Brinck <i>et al.</i> , 2001).	A14	Original, Fresh Content (Nielsen, 1999)
A6	Accessible to All Users (Brinck <i>et al.</i> , 2001)	A15	Target Audience (Nielsen and Loranger, 2006)
A7	Well Planed Information Architecture (Karvonen, 2000)	A16	Tracking (Nielsen and Loranger, 2006)
A8	Well – informed/Easy to Scan Content (Karvonen, 2000)	A17	Get on Board With Social Media
A9	Fast Load Times (Ginige and Murugesan, 2001)	A18	Unique (Kelly, 2000)

The following webpages studied: Greek Agroforestry Network (W1), European Agroforestry Federation (W2), AWAf (W3), REBRAf (W4), AGFORWARD (W5), Otway Agroforestry Network (W6), Center of International Forestry Research (W7), Agroforestry Research Trust (W8), World Agroforestry Center (W9) and Anafe (W10). Nonetheless a 2-dimentional Table was developed (Table 2).

Further, a model website structure developed of regional interest aiming to promote agroforestry in N. Greece. The proposed website will support information for training purposes and as a reference for environmental issues. Through the website users will be informed of agroforestry ecosystems in N. Greece, there will be career opportunities and integration programs in agroforestry unit network and information related to agroforestry ecosystems.

## III – Results and discussion

Many websites were retrieved in Internet concerning agroforestry. The 10 most visited websites were selected. In Table 2 the characteristics and services they provide are presented.

The proposed page is easy to use that allows navigating back and forth as it relies on the graphics and the text. Its use is web-friendly and the in-depth knowledge of informatics is not necessary, so that can be used from anyone, and is taking into account people with disabilities in reading (can listen the structure and the parts by opening each page of the website). Also,

the opportunity to share the content through social media is given. The site consists of a fixed part (logo - name of the web site) and just below a variable part in which portrayed keywords that separate categories and open sections exists (Fig.1). More specifically, modules begin with the following: Home – News – Media – Events – Projects – Links – Forum – Contact - Sign

On the topside, at the left, there are 3 buttons that allow users to hear the content of each page and to enlarge/minimize letters. On the left side and under the portable part there are two bottoms: “career offers” and “volunteers”. While on the right side the flags of Greece and UK can change the language. After each article a palette is appearing; through that users can share the content of pages to common social media networks.

**Table 2. Description of websites concerning characteristics and services**

	Characteristics & services																	
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18
W1	*	*	*	*			*	*	*	*	*		*		*	*		*
W2	*	*	*	*			*	*	*	*	*	*	*	*	*	*		*
W3		*	*						*	*				*		*		
W4									*	*						*		
W5	*	*	*	*			*	*	*	*	*	*	*	*	*			*
W6	*	*	*	*			*	*	*	*	*	*	*	*	*			*
W7	*	*	*	*			*	*	*	*	*	*	*	*	*	*	*	*
W8		*	*						*	*				*		*		
W9	*	*	*	*			*	*	*	*	*	*	*	*	*	*	*	*
W10	*	*	*	*			*	*	*	*	*	*	*	*	*	*	*	*

Also, at the bottom part there is a fixed part with the heading “who we are” that includes portable parts with the following words: Partners and Stakeholders – Consortium – Independent Evaluation arrangement – Funds – Independent Science and Partnership Council. These five words open new pages. They can be found in every page of this web site.

**News.** By putting the mouse pad above two words appear; “Press releases” (articles related to agroforestry ecosystems) and “newsletters” (issues of the “agroforestry in Northern Greece” magazine that will include crucial subjects of agroforestry).

**Media.** By putting the mouse pad above this word, two new words appear downside; “library” (articles published in scientific magazines) and “reports” (reports of the government and new laws).

**Events.** At this part events that have to do with agroforestry are mentioned or related topics such us symposiums, summer schools, seminars etc.

**Projects.** The “project” part will have to do with projects that are running or that they are about to run in the near future. Also, by the end of a project final reports for that will be uploaded there.

**Links.** At this part of the site some useful links for navigation will be mentioned.

**Forum.** This link opens a new page. Here everyone can become a member and exchange his ideas with the others.

**Contact.** By clicking at this word a platform is uploading. The user can express his questions to the administrator of the web page by putting into cells his personal data (name and surname / email account) and then there will be a bigger cell with empty space to write the text.

**Sign.** Through that users can be connected and receive emails. Each time something new is added to the website an email will be delivered to their personal email accounts.

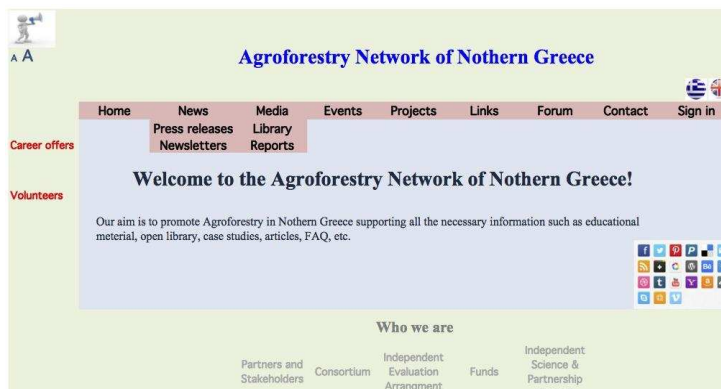


Fig. 1. Description of proposed website. Home page.

## IV – Conclusions

There are many websites attempting to support agroforestry activities. 10 of the most viewed were examined as to their content characteristics. Thus, we proposed a structure of a model website with a regional development interest that will promote agroforestry as a technique that respects the environment and has a strong tradition worldwide. It will give all the necessary information in a friendly environment such as audio-visual educational material, open library, case studies, articles, forum, social media, FAQ, etc.

The proposed structure has to be designed in a user-friendly style so that farmers and regional stakeholders, teachers and students and even researchers, can use it as it presents a large volume of agroforestry data in a simple way. Moreover, it can become a model for the improvement of similar websites. Through the website, local population can be motivated as to the preservation of agroforestry ecosystems. It can contribute to the local economy actions as it provides advices/successful examples for agroforestry activities and job opportunities.

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