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Sustainability indicators in a knowledge-based bioeconomy

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Although some elements of the concept of bio-based economy were an issue since the 1970s oil crisis, is in our days that in many societies are an emerging priority. A growing amount of expectations are now based on this bio-based economy, expectations of technological, social, political and above all economical nature. This optimistic climate encourages policy makers to make steps ahead and they are welcomed by the private sector. It is commonly agreed that the achievement of this procedure requires its development to occur in a well determined sustainable conditions. In order to achieve a sustainable operational system, is necessary to define sustainability indicators on a case by case basis and to optimize a number of parameters such as; parameters of scientific or technological nature, parameters of regulatory nature and parameters of economical nature. Even when substantial realisations of biotechnology have already been shown, significant challenges lie ahead in expanding this technology to address major technological

and societal needs, particularly for the sustainable development of our European society while remaining competitive in a global marketplace. The seamless integration of industrial biotechnology into existing industries and technologies creates new applications, products and processes in an evolutionary rather than a revolutionary manner. Parameters of social and ethical nature; Social legal and ethical aspects have been proved important issues in many applications of modern technology the last 15 years. A systematic analysis of the public perception shows that significantly influences technological adoption, the market uptake of novel bio-products, and the development of the appropriate regulatory framework.

Communication: A special attention should be devoted in the case of risk communication in a systematic way to more fully assess risks, to get transparency into complexity and to address uncertainties or knowledge gaps.

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