

# SCHOOL AGROECOLOGY AS A MOTOR FOR COMMUNITY AND LAND TRANSFORMATION: A CASE STUDY ON THE COLLABORATION AMONG COMMUNITY ACTORS TO PROMOTE EDUCATION FOR SUSTAINABILITY SCHOOL NETWORKS

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*Abstract:* The Science Education Department from the Autonomous University of Barcelona (UAB) and the local administration of the Sant Cugat del Vallès municipality in Catalonia, Spain have been collaborating for the last seven years through the program School Agenda 21 to promote education for sustainability programs in schools and the community. The collaboration has focused on School agroecology which has facilitated the establishment of links between the schools and the land so that a new community could be built. A new network has been created with the participation of 22 public schools (0-18 years), five agro-environmental educators, researchers from the university, administrators from the local administration, and other relevant community stakeholders. This paper presents a case study of this collaboration in order to identify in one hand the community and land changes as a consequence of this collaboration and on the other hand the tensions experienced by the different stakeholders of the collaboration. The research methodology is oriented through a qualitative interpretive paradigm and has adopted a bricoleur model for the management of data collection strategies which include participant observation, document analysis, and formal/informal reflective interviewing. Data analysis has followed the development of assertions as a way to build knowledge from the case. The results of the case indicate that School agroecology is a social context that facilitates the construction of a community where the different stakeholders have the opportunity to make changes in the land, in education, and more specifically in science education. This case study is also part of the ongoing European CoDeS network whose main aim is to collect exemplar case studies on school community collaboration towards sustainability. One important focus of this network is to identify collaboration models in which science education has a relevant role.

*Key words:* School agroecology, Education for sustainable development, Environmental education, Case study, School vegetable gardens

## **PURPOSE**

The Science Education Department from the Autonomous University of Barcelona (UAB) and the local administration of the Sant Cugat del Vallès municipality have been collaborating for the last seven years through the program School Agenda 21 to promote education for sustainability programs in schools and the community. The collaboration has focused on School Agroecology ([www.agroecologiaescolar.wordpress.com](http://www.agroecologiaescolar.wordpress.com)) which has facilitated the establishment of links between the schools and the land so that a new

community could be built. A new network has been created with the participation of 22 public schools (0-18 years), five agro-environmental educators, researchers from the university, administrators from the local administration, and other relevant community stakeholders. This paper presents the results from a case study of this collaboration in order to identify in one hand the community and land changes as a consequence of this collaboration and on the other hand the tensions experienced by the different stakeholders of the collaboration.

The present symposium will provide a forum in which eight science education researchers from three different countries will present case studies on school community collaboration towards sustainable development. The work presented in this symposium is part of a European Network CoDeS (School and community collaboration for SD/ESD) funded by the EU (2011-2014) whose general aim is to collect and disseminate successful collaborations among European schools and communities to promote sustainable development. One important focus of this network is to identify collaboration models in which science education has a relevant role (CoDeS Project Homepage, 2013).

## **RATIONAL**

Local administrations in Europe experience difficulties in developing Agenda 21 programs which involve schools and promote local sustainable development. Agroecology is a transdiscipline that aims at promoting local development by taking into account the ecological, social, economical and political dimensions of new and alternative agricultural practices (Sevilla Guzman, 2006; Sevilla Guzman et al. 2000). School agroecology is the result of a didactical transposition of Agroecology which promotes the introduction of agricultural practices in schools and the involvement of schools in local sustainable development (Espinete & Llerena, 2011; Espinete, 2011). It has been coined as praxis with the aim of empowering students and the educational community to become authentic agents with an increasing control over the school food system (Espinete, Llerena & Rekondo, 2012). The present case study aims at deepening our understanding on how successful collaboration among community actors works so that education for sustainability and science education are promoted. We are particularly interested in gaining deep insights on social and educational processes which maintain community learning environments.

## **METHODS**

The case study uses a qualitative approach to research oriented by an interpretative paradigm that takes an “emic” point of view to describe stakeholders’ participation within the case (Stake, 1998; Guba & Lincoln, 1989). The data collection strategies for the whole study include participant observation, document analysis, and formal/informal reflective interviewing thus adopting a bricoleur model to research methodology (Kincheloe, 2001). In this paper we will present the case study based two kinds of data such as primary and secondary data sources. The primary data source is constituted by the 62 minutes of all the school network meetings (Llerena, 2013), and the secondary data sources are constituted by the school interviews and blog materials.

## The minutes of meetings as data sources

The minutes of the network meetings are central documents in the development of the school network and have been written by one of the researchers and co-author of the paper as part of his professional duties. This document serves different purposes such as field notes collection, instrument for communication, establishment of commitment between institutions, and recognition of actors' participation. The minutes created specifically for the school network are thus a new textual genre which lies in between an official minute, a narrative and a piece of news.

The minutes have a common global textual structure which has been followed and include the place and date of the meeting, the name and logo of the agenda 21 program and UAB, the attendants, the meeting agenda, a summary, a participants photo, the textual and visual description of the school garden visit that takes place at each meeting, the textual and visual description of the conversation, and finally the annex documents used in the meeting. The process of minutes production by the author follows similar patterned actions which include: (a) note taking by the author during the meeting and videotaping; (b) the author writes the minutes in the following week and sends them for review to the second coordinator of the network and few relevant participants in the meeting; and (c) the minutes are sent to all participants and uploaded in the blog. The

## Dimensions for data analysis

Data have been organized into meaningful dimensions which are relevant to the study of school community collaboration for ESD. These dimensions have been chosen from the work developed within the Comenius Network on School Community Collaboration for ESD (CoDeS). This work has identified 8 quality criteria which act as key stones of successful school community collaboration for ESD (Espinet, 2013). The research dimensions used to analyze the data collected were taken from the CoDeS key stones and were paired based on the actions they were supporting (Table 1).

Table 1  
*Key Stones as Dimensions for the Case Study Analysis (Espinet 2013)*

<b>Dimension</b>	<b>Characterization</b>	<b>Action</b>
Dimension 1	Participation	Networking
Dimension 2	Communication	
Dimension 3	Learning	Changing
Dimension 4	Acting	
Dimension 5	Visions	Orienting
Dimension 6	Mandates	
Dimension 7	Resources	Supporting
Dimension 8	Research	

Data analysis has followed Erikson (1989) development of assertions as a way to build knowledge from the case. The main questions that guided the analysis within each of the above mentioned dimensions were the following:

- a) What things are changing?
- b) In what direction are they changing?
- c) Who is involved?
- d) What tension is driving the change?

## **RESULTS**

Some results are presented in the form of assertions that identify the main changes and tensions experienced by stakeholder of the collaboration within one particular dimension.

### **Dimension4: Acting**

The assertion corresponding to this dimension is the following: “Pupils and teachers foster changes in the school “territory”: “from agrarian reform to school agroecology reforms”.

Setting up school or municipal food gardens—in spite of their educational nature— still evokes the conflicts and difficulties that agriculture has experienced throughout history, albeit on a smaller scale. Farmers’ movements have always demanded and fought for agrarian reform and, in school agroecology, there are also some short histories on land occupation.

### **Dimension1: Participation**

The assertion corresponding to this dimension is the following: “Educators and farmers experience changes in the community: the emergence of a new agent between schools and the farming community living in a precarious situation between two worlds”.

Two new community actors—*agroenvironmental educators* and *farmers*— have gradually emerged, and their roles have sometimes been fundamental. Other actors, such as families, do not appear to have played such fundamental roles despite the fact that they are essential, key actors in school communities, particularly at certain stages of schooling.

### **Dimension6: Resources**

The assertion corresponding to this dimension is the following: “Local administrator and program coordinator promote changes in policies: juggling with regulations”.

Ecological school dining rooms, the employment of educators to undertake duties in educational communities, collaboration between municipal programs run by different departments and the participation of schools in municipal budgets are fields in which regulations and current policies make community action very difficult. Local administrators need to find cracks within the system so that small changes can be introduced, thus facilitating progress and resistance from a critical viewpoint.

### **Dimension3: Learning**

The assertion corresponding to this dimension is the following: “Teachers develop changes in their pedagogical practices: opening the multiple doors of the curriculum”. School agroecology never made its way into schools immediately as a general approach;

rather, it depended wholly on the teacher who initiated the project. The particular context of each school (its history, the people at it, the changes it undergoes, its social composition), and also of each specific teacher that has taken part in the project provide the explanation as to how agroecology made its way into schools

### **Dimension8: Research**

The assertion corresponding to this dimension is the following: “Science and environmental education researchers experience changes in their role as researchers: from “off-the-shelf” research to a social learning laboratory”.

School agroecology has allowed work to be done in a laboratory such as the school network which has acted as a platform for applied research. In doing so researchers’ role has included action involvement in the community and community actors’ role has introduced the research dimension in it.

## **CONCLUSIONS AND IMPLICATIONS**

School agroecology creates social contexts that facilitate the construction of a community where the different stakeholders have the opportunity to make changes in the land, in education, and more specifically in science education (Espineta, Llerena & Rekondo, 2012). The impact of the collaboration has been the creation of a new ES field: School agroecology, which can really act as a motor for school and community change. At the level of schools the impact has been differently experienced.

For the Nursery Schools, the collaboration has provided an opportunity to become active members of the educational community for the first time ever and reform school open spaces. For primary schools the impact has been in the systematic introduction of new educational spaces such as school food gardens that keep growing year by year. For secondary schools the collaboration has provided a safe context where adolescents have become authentic agents of education for sustainability by teaching plant growth and matter cycle to younger children.

For the city hall environment department the collaboration has opened them to real education processes overcoming the old vision of schools as being recipients of sustainability messages. For the university the collaboration has provided a social laboratory where to directly experience ES innovation and research. For the NGO side, the collaboration has created a new role, the agro-environmental educator, who has been able to participate as one more member in the educational community. Finally, a new emerging impact comes from the new young agroecological farmers in the municipality who have found a new social network where to start new production and consumption local business. For the work of CoDeS this case provides in depth reflections and evidences of successful school community collaboration towards sustainability. Further information on this CoDeS case is available under CoDeS Case Blog (2013) <http://codessantcugat.wordpress.com/>.

## Acknowledgments

This work has been partially supported by Spanish MCYT grant EDU-2009-13890-C02-02, Spanish MCYT grant EDU-2012-38022-C02-02 and Catalan PRI 2009SGR1543.

## REFERENCES

- CoDeS Case Blog. (2013). <http://codessantcugat.wordpress.com/>. Retrieved December 20, 2013
- CoDeS Project Homepage (2013). <http://www.comenius-codes.eu/>
- Erikson, F. (1989). Métodos cualitativos de investigación sobre la enseñanza. In M. Wittrock (Ed.), *La investigación en la enseñanza, II. Métodos cualitativos y de observación* Madrid: MEC/ Paidós.
- Espinet, M. (2011). *Bases para el diseño de la agroecología escolar desde una perspectiva sociocultural*. Seminario de Investigación en Educación Ambiental. Segovia: CENEAM.
- Espinet, M. (2013). *Key stones of successful school-community collaboration: First findings from CoDeS case studies*. CoDeS Working Conference on Living sustainable community-school collaboration: Learning for the future. Kerkrade: The Netherlands.
- Espinet, M. & Llerena, G. (2011). *The making of a new STEM discipline: A sociocultural view on school agroecology*. Cultural Studies of Science Education Forum, Orlando, Florida: EUA.
- Espinet, M., Llerena, G. & Rekondo, M. (2012). *School agroecology as a motor for community and land transformations: the collaboration between local administration and university to promote ES school networks*. CoDeS Working Conference on Collaboration of Community and School for Sustainable Development. Viena: Austria.
- Guba, E., & Lincoln, Y. (1989). *Four generation evaluation*. London: Sage publications.
- Kincheloe, J. L. (2001). Describing the bricolage: Conceptualizing a new rigor in qualitative research. *Qualitative Inquiry*, 7(6), 679-692.
- Llerena, G. (2013). Minutes of Network Meetings (Actes del Grup de Treball Educació per la Sostenibilitat al Llarg de la Vida) available at [www.agroecologiaescolar.wordpress.com](http://www.agroecologiaescolar.wordpress.com).
- Sevilla Guzmán, E. (2006). *De la sociología rural a la agroecología*. Barcelona: Icaria.
- Sevilla Guzmán, E., Guzmán Casado, G., & González de Molina, M. (2000). *Introducción a la agroecología como desarrollo rural sostenible*. Madrid: Mundi-Prensa.
- Stake, R. (1998). Case studies. In N. Denzin, & Y. Lincoln (Eds.), *Strategies of qualitative inquiry*. California: Sage.