Educational practices at Karst Park Akiyoshi, Japan

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Abstract: This paper presents an overview of the educational institutions and practices at the Akiyoshi Quasi-National Karst Park in Japan. They have been classified according to their effect as direct learning about the nature of karst and such having indirect educational effect in understanding the features of karst, but developing social education supported by the karst natural environment.

Keywords: karst, education, educational activities

1 Introduction

The educational strategy proKATSTerra-edu as developed along the homonymous research project (Stefanova, D., Stefanov, P., Mikhova, D., 2008, Stefanov, P., 2013) is based on the premise, that karst environments are specific geosystems with high vulnerability to human impact. This requires special attitude and skillful management of karst territories. To achieve this goal special education is needed, which should start from early childhood and should be held under different forms, including academic learning, field observations, practical activities, art, etc. Agreeing with this concept, we continue reflecting in a reverse direction, namely how karst territories can become the stage for social education. By social education we mean adaption of individuals to the social organization and behavior of the community inhabiting the respective karst territory, acceptance of its values and learning good practices in both social communication and environmental use and protection.

The Akiyoshi Quasi-National Karst Park is an example of such a stage, where educationally oriented institutions work through their infrastructure and different activities to offer knowledge about karst as specific environment (the word “Quasi” is used to indicate, that this is a national park, subject to all regulations as such, but managed by the local authorities, not directly by the Ministry of Natural Environment). Often these educational institutions have to collaborate, or sometimes contradict with other local organizations, NPOs, commercial institutions, or individuals with different interests, a number of which have their perspectives and ideas about the
karst territory management and its educational potential for social education. This situation is inevitable since national parks in Japan are not just wild territories as in other countries such as USA and Australia, for example.

It should be mentioned, that even though the Museum of Natural History at Akiyoshi existed for a long time, practical knowledge about karst specifics found its way to the local community quite late, the bitter way. With the construction of hotels and sewerage system on the karst plateau (1967), bad smells occurred and engineers had to learn the reason. Then they realized the karst specifics. Since karst is not widely distributed in Japan, there was (and still is to a certain extent) a gap between karst academic knowledge and practices for its use.

Based on our prior research on the Akiyoshi Quasi-national karst park’s nature, land use, infrastructure and management, we proceeded exploring the educational aspects and roles of institutions, organizations, establishments, and individuals, connected to this unique territory.

2 Methods of research and data collection

- Studying published materials and historical data;
- Field observations and personal involvement in education-related events;
- Interviews with educational activists about the territory of the studied karst park.

Institutions, organizations, NPOs, commercial entities, individuals related to education on the territory of the Akiyoshi Karst Park

Figure 1 represents an attempt to organize the main “players” and major activities, connected to education in one way or another. They have been classified according to their effect as direct learning about the nature of karst and such having indirect educational effect in realizing the features of karst, but developing social education supported by the karst environment.

Figure 1  Institutions, organizations, NPOs, commercial entities, individuals and activities related to education on the territory of the Akiyoshi Karst Park. The arrows show submission to the respective authorities or institutions. The lack of arrows shows, that the respective institutions or activities, even coordinating their work, are not subject to any direct regulation from authorities.
As seen from the diagram, **Mine city** is the administrative center responsible for the Akiyoshi Karst Park infrastructure and management. In recent years the Mine city authorities have been working hard to declare “Mine Geo-park”, which exceeds the borders of the Akiyoshi national karst park. This enterprise may have some controversial effects. First, it is not supported by local communities, especially those of the two villages Shuho and Mito, situated on the karst plateau and which used to manage it jointly since old times until the administrative merge, which made Mine city administrative center of the region. From economic point of view a larger park, including the Akiyoshi Plateau may offer a larger menu of tourist programs aiming at higher profits (the main target). From educational point of view this may expand the knowledge of visitors about more natural and cultural sites of interest. But from the point of view of learning “What is karst, why does it make different environments, what is necessary to do to understand it better, how should it be managed” etc., it is most likely this initiative to bring to negative results. The balance of interest might be “misbalanced” by cultural sites and the Akiyoshi karst to be viewed more like a landscape, than an active, live and complicated geosystem, with specific way of functioning.

The institutions offering academic knowledge about karst on a regular basis are the Museum of Natural history on the top of Akiyoshi Plateau and the Eco-museum located at the plateau periphery, low in a river valley. Both are excellently designed and maintained, but both experience some problems.

**The Museum of Natural History** is responsible for many events basically with educational effect. Except for the well-structured and delivered lecture about the origins of Akiyoshi karst plateau, the visitors learn significant amounts of information about karst geosystems (even though this term is not directly used), the rock fossils, plant and animal life. This museum is connected to a well-organized field path, with questions on the route, like a quiz, helping the visitors to think and understand the nature of karst (the answers are at the Museum). It is also the coordination center of Eco-tourism. It also carries out numerous other activities related to learning the nature of karst.

One problem of this museum is lack of staff. For this reason lectures are held only by groups, with prior reservation. At the same time the structure of Japanese tourism has been changing. In the past most of the Japanese people traveled in organized groups. Nowadays there is a pronounced trend toward organizing travels either in small groups, or family trips (Mikhova, 2012). As a result the occasional visitors are less likely to receive detailed oral explanation about karst specifics, why and how the caves and landscapes are formed.

The Museum of natural history is the center of the **Volunteer Organization of Eco-tourism**. About 10 tour guides (volunteers) offer tours throughout the karst park with specialized explanations about both natural and cultural elements. According to Y. Yoshimura, a native resident and involved in matters referring to Akiyoshi, as well as volunteer tour guide, each member of the organization specializes in different aspects of the karst territory, so each tour is thematic in accordance with who leads it. But in fact each guide includes other elements of natural and cultural features, other than his specialization. Tours are carefully planned and announced months ahead. Our research shows, that many families participate, which is a great opportunity for human contacts in our world of “cell-phone” communication.

**The Eco-museum** is an educational center of learning about the Akiyoshi karst
under the Mine city office management. It has wonderful up-to-date facilities, with impressive exposition, which explains the upper and underground parts of the karst geosystem. It is more children-oriented, offers seminar rooms and computer games with quizzes related to Akiyoshi karst. The museum staff is actively engaged in educational research projects with children, considering different elements of the karst territory, and currently the importance of trimming the top plateau grass. They work with local schools and the Green school, situated on the territory of the karst park.

The Eco-museum scope of education even includes points of safety in caves including equipment people need to have and mock experiencing movement in an artificially made cave.

The Eco-museum also offers space for karst- and karst related exhibitions from specialists from universities and schools.

This museum experiences two major problems. One is the lack of staff, which reduces the possibilities of developing more research projects. The second problem is that the number of visitors is decreasing. The first problem may be connected to the second one, since less projects means less advertising the educational potential of this very good facility. Another problem is that the museum is located at a place, which is not exactly on the main route of tourists. There is Safari-land quite close and many visitors to this part of the territory more often visit it rather than the educational facility.

There are a number of universities in the Yamaguchi prefecture, where some of the staff is involved in karst research. The involvements of Universities can be classified as follows:

There are numerous examples of University teachers doing research in Akiyoshi and publishing papers and books, examples: about flowers, about herbs, about rocks, etc., there is not space to cite all of them.

- University teachers hold field practices exploring ecological problems, environmental research, nature-related way of life, etc. Sometimes students stay in self-built camps to better feel the nature of this specific environment.
- Graduation papers and Master theses have been developed concerning both the nature of the Akiyoshi Karst Park management and social problems of the local community. All cannot be mentioned, but the last one at the Yamaguchi University was a master thesis “Pros and Cons of making Mine Geo-park” (2014).
- Often universities use the Akiyoshi Park as a ground for their educational work, combined with pleasant events and learning about the Akiyoshi karst. For example, every year our Department of Cross-cultural Studies of the Yamaguchi University holds a seminar “How to apply for international exchange”. The seminar is held at Akiyoshi, preceded by a visit to the Museum of Natural History, a lecture, visit to the Akiyoshi-do (cave), a walk around the Akiyoshi Plateau, and discussion about the nature of this specific environment.
- Recently university art teachers show great activeness in shaping the future of the Akiyoshi Karst Park. Fact is, that they are interested not only from their artistic perspective, but also from the point of view about how art can unite parties of different interests, such as managers, scientists, artists, commercial organizations, and NGOs, to boost the local economy and make the place
more attractive. A symposium hosted by the Yoshihisa Nakano Lab, Department of Art, Yamaguchi University, is a great example of this process.

Historically, the local universities, especially the Yamaguchi University had a large role in saving the area from military destruction and making it a park. University teachers were among the leaders of this uprising of the local people against the government plans. That was a wonderful example of how they taught their students how to love and fight for the specific nature of native land.

There are many university and non-university clubs, which are connected to the Akiyoshi karst. Examples are Caving clubs and Science clubs. These clubs learn a great deal about karst and the karst environment.

There are 21 elementary schools and 8 junior high schools in the Territory of Mine city (Figure 2). There was a high school in this city, but it was closed (Figure 2). They all have connections in one way or another with the Akiyoshi Karst Park and learn about its specifics in diverse ways. In order to understand how much the children understand karst and how much they are involved in this education we should know a little about the Japanese educational system. As in many other countries in the World, it cannot be described in several words. In many European countries, the Ministry of Education is the leading authority, managing the educational system in that respective country. Local authorities and communities have different levels of impact on how the educational process should take place both academically and financially.

![Figure 2](image.png)  
**Figure 2** Schools around Akiyoshi Karst Park. Lighter (yellow) symbols are elementary schools. Red (darker) symbols are junior high schools. The central green (darker) area is the Quasi-national karst park Akiyoshi.
In Japan there are two authorities that decide the educational environment: the Ministry of Education, Science, Technology and Sports, and the local Committee of Education. A clear way to understand the functions of both might be the answer of a member of the former Committee of Education of Shuho Village (Akiyoshi Plateau). Asked “what is their function, since there is a Ministry of Education”, his answer was: “Let them at the Ministry deal with the academic part and develop academic curriculums. Our job is to educate good citizens and reliable members of this particular community”. The Educational Committee is elected by the local people and is powerful in management of local schools. Many of the Committee members are retired teachers. They get their salaries from the government through the Prefectural Office, but neither this office, nor the local city authorities have any rights to control the committee.

So the local Educational Committee has substantial impact on introducing education related to the Akiyoshi Karst Park as a unique natural environment and homeland, and its importance in the local community life. Almost all schools hold events, excursions, and sports events at the Akiyoshi Park. There is a special subject: “Topic research”, in which pupils choose a certain theme to conduct research. Children often choose topics related to elements of the Akiyoshi Karst Park. The same applies to other schools around the Yamaguchi Prefecture.

Our surveys show, that the level of interest of pupils depends on the particular teacher’s interests, and especially the School principal. They all change with time and years. Japanese teachers rotate around different schools within one prefecture and their appointment depends on the decision of the Prefectural Educational Committee. When teachers interested in karst come around, many learning events about karst takes place. In other cases the interest is limited.

One excellent example was with the children of Yashiro Junior School, where teachers prepared “Children tour guides” (2005). Children were divided into groups and each group studied different elements of karst, namely: rocks, water, vegetation, animals, birds, etc. Children prepared posters and once a week they, together with their teachers, went to the Akiyoshi Plateau, met tourists, and explained the karst features in a very attractive way, including quizzes and practical explanations. Children even went around the plateau to look for some occasional trash and collect it to keep their karst plateau clean.

In Japan, like many other countries in the world, there are the so called “green schools”. The meaning of “green school” is different in each country. In Japan this means children from different schools spending about 10 days in some specific natural environment and learning about nature through experiments, field work, games, boy-scout experiences, etc. The Akiyoshi Plateau Green School is unique in that it is in a karst park. Many of the children are involved in the Akiyoshi grass land project, managed by the Eco-museum. They also observe and participate in the “micro” agriculture in the dolines, planting, observing or harvesting vegetables in these karst negative forms; especially the Japanese vegetable gobo, which grows best in the dolines is most popular. Researching about how much children from the green school learn about Karst, we studied the basic documents of these schools and their purposes. In fact, the main purpose of these schools is not learning so much about the environment. The main purpose is “to learn how to communicate in a group, how to make friend, and how to live together in a specific natural environment”. In this case Akiyoshi
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yoshi National Karst Park appears more a stage, than an object of learning.

**The Village of Family Travel** is another important object on the Akiyoshi Karst Plateau, which is in fact privately owned and managed, but created with the initial state subsidy, orientated towards the state social policy. It is not unique in Japan – many such “villages” have been built. The Akiyoshi Village of Family Travel is unique in that, it is the only one in karst. It offers free parking lots, log houses and tents for family recreation, barbeque places, more than 40 camping sites, children’s playground and many other facilities for affordable family recreation. It also offers renting of small patches of land for agricultural cultivation in the dolines around the Family village forest land. Asking the question “So, what do the visitors learn about Karst?” we can answer simply: they get interested in karst. They begin asking questions: Why is this beautiful landscape here and why not at other places? Why is this place different from others? They visit the Akiyoshi-do Cave and the museum to receive a part of the answers of their questions.

**The Art Village** is an establishment, which has its origins in the Family Travel Village on Akiyoshi. In the 1970s, International Music Seminar was organized at the Family Travel Village, with world-wide known director and musicians. The acoustics was excellent, and the idea of building an International Art Village was born. Later it was accepted by the Japanese government and facilities were built in the Karst Plateau Periphery. It is extremely prestigious for world young artists and musicians to win scholarships and residency for six months there where they exchange ideas with local artists and musicians. Teaching about karst is not a direct undertaking and there are no special lectures about karst. But each year a topic is chosen before the participants arrive, hoping they will develop their artistic works in compliance with the topic. In recent years the topics concern more the local environment and artists pay more attention to its (karst) features.

There is an International **Youth Hostel** on the Akiyoshi Karst Plateau. In fact this is not a usual dormitory for traveling young people. This is a place, where young people from science, art, or other fields of achievement come and meet counterparts from the Yamaguchi prefecture. Together they organize events and exchange ideas in the karst park environment, which inspires them. In fact this is not an explicit karst-learning education. But happening in this particular environment, it makes young people ask questions about its origin and features.

There are many **private businesses, non-government organizations, and volunteer groups**, which are interested in attracting more visitors to the Akiyoshi. Their aim is most often economic profit, but many of them pay for information pamphlets that offer explanations about the Akiyoshi cave, the Akiyoshi Plateau, the landmarks.

Numerous **sports events** take place at Akiyoshi Plateau, such as orientation, motor-cross, and an annual marathon. They attract hundreds of people, who did not know about karst environment before, but seeing it, they are likely to ask questions about why it is different from other places.

There is one event taking place at the Akiyoshi Plateau that has also important educational impact. This is the so called **Yama-Yaki Event** (Yama-Yaki means “burning of the mountain”). Every year in February the top of the Akiyoshi Plateau old grasses are burnt, to make place for the young grasses to grow and produce a beautiful grass landscape with scattered by white stones. Because the humidity and temperature is very high until April-May the landscape becomes extremely beautiful. The
The Yama-Yaki Event is very special for this region. It is directed by the Management office, but several “players” are involved. Before burning special stripes should be dug, to protect the surrounding forests from the burning grass on the top of the plateau. For this work many people need to be hired. And here is the educational effect – a lot of volunteers come and work together for the beautiful future next year of their natural treasure the Akiyoshi Plateau. Not only strong men, but also families with children, pupils from the local schools (with their teachers), local people and also people living as far as about 200 kilometers away (according to our survey) join to help. The role of local businesses is to organize special parties with local food, based on local products. The atmosphere is very pleasant and children learn how nice it is to work together for your specific home land. Of course, the police, the fire squad, the local authorities are all in place, as well as the local TVs, radio, newspaper media. The view of the great fire is magnificent and all people can see it on television.

There are many other activities and events that make the Akiyoshi Karst Park attractive and help reveal the beauty of karst: a lot of volunteer tour guiding, pleasure activities, students’ visits, etc. Our last finding is that the big cement plants, which takes limestone from the Akiyoshi area (out of the park) are recently interested in educating people about their work and to learning about karst. The Ube Cement Plant organizes special tours from the plant, along their specially built road, to the Akiyoshi quarries. Their explanations, of course are based more on how cement is produced, but they also teach their tourist participants how limestone happened to be found at this part of the island, which is also a component of natural education.

There is one thing, which is not exactly an educational activity, but has a great impact on education. This is the very history of the Akiyoshi Karst Park. Before and during the Second World War the Akiyoshi area was a kind of grass-shrub-tree environment and an infrequently used area. The small areas of flat lands and valleys are intensively used for agriculture in this country. The rest of the land is mountains of extremely steep slopes. And here it is – Akiyoshi – a rather flat land, not intensively used. A perfect site for military training. It was used for such training for some time. But later the American Army Occupation happened. The Americans decided to make this place a training site for bombing. Even at some period there was a sign on Akiyoshi: “American property” (we found such pictures during our research). Akiyoshi Karst Plateau was planned to be the training site of both American and Japanese military to throw their bombs and see the effect. Every – even slightly educated karstologist - can imagine the result of such massive military shelling. No caves, no dolines, waters flowing unexpected ways, carrying unknown substances...

But the local people and local academics did not allow that. They united together and organized a great protest, to which the National Government could not resist. The Akiyoshi land was prohibited for military use and pronounced a National Karst Park. According to our opinion this was one of the best lessons to tell the future generations how important it is to fight to protect our native land, and especially in this case this was a unique karst land.

3 Conclusions

Protecting karst territories is very important, because they are very vulnerable to human impact. They have to be specially protected, but to achieve this goal, first we
need to teach young people how to do it. This cannot happen if they do not know the nature of these territories. In Japan there are very few karst territories and knowledge about their management is not wide-spread. But Japanese people have a strong feeling of protecting their homeland, including karst lands and this is what saved the Karst Park Land of Akiyoshi.

There are many activities taking place at Akiyoshi Karst Park, teaching about karst, or teaching about how to work together in a community, and to protect the native karst territory. Hopefully they deserve attention and exchange of experience.

References

