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Institutionalizing the Informal: Irrigation and government intervention in Bali

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Abstract:

Although there is greater acceptance that farmers can manage their irrigation systems efficiently, many irrigation experts believe that a shift from informal to more formal management strategies will lead to even better water-flow management. This article examines a case in Bali where attempts to introduce formal institutions lead to confusion within the farming community. We conclude that irrigation improvement projects need to engage with the local context and encourage a minimum of formal organization.

Keywords:

Bali, Farmer managed irrigation systems, Government intervention, irrigation institutions

Introduction

Irrigation systems in Southeast Asia have undergone significant changes in the last fifty years.(1) Technological interventions aiming at increased efficiency and crop productivity were accompanied by the implementation of centralized, government-led irrigation bodies, detaching local users from the management of their resources (Groenfeldt, 1997). Many state-operated irrigation infrastructures, however, deteriorated because social aspects, at the centre for local users, were neglected in the project designs (Meinzen-Dick, 1997). In consequence, the focus shifted to decentralization to include local water users in participatory management (Dayton-Johnson, 2003).

Nevertheless, there is still an underlying disposition that greater formalization of farmer managed irrigation systems (FMIS) will lead to even better water-flow management. Irrigation experts, non-government as well as government, find it difficult to grasp the 'informality' of irrigation management which is part of local resource users' management strategies.

Informality is the enemy of government improvement projects. Informality implies a shared understanding of the resource users, not only on how they manage the resource, but also how the resource is embedded in the local environment. Good knowledge of rainfall patterns, soil qualities, water dependencies, religious activities, and many more variables anchors the informality in such a complexity that it is extremely difficult and time consuming for the outsider to penetrate into this complexity. Irrigation improvement projects, therefore, tend to reduce the complexity to a few variables. What Scott (1998) calls the hegemony of scientific knowledge over local, practical knowledge allows putting the complexity of local practices aside by labelling them 'underdeveloped'. This, then, is the determining attitude of developers in regard to simplifying local practices by emphasizing a few variables which they define as important. Such a simplification – often accompanied by introducing more formal institutions – can undermine the complexity which local users employ. It takes management variables out of the context and gives them a higher priority. For local users this complicates resource management rather than simplifying it because the context is disrupted.

The Balinese *subaks* – loosely translated as socio-religious irrigation societies – are examples of how irrigation management is embedded into the social organization. Although *subaks* have formal arrangements concerning membership, territory, and members' rights and duties, these arrangements are embedded into social and ritual interactions between members and between adjacent *subaks* (Sutawan, 2000). Water distribution, the main concern of the *subak*, is negotiated on a daily basis between farmers, sub-*subak* heads, and *subak* heads. Social relationships, informal agreements, even disputes are seen as an integral part of the daily working of the *subak* as a whole. For Balinese farmers the *subak* is the framework in which the informal management can take place. External agencies tend to concentrate on the formal *subak* structure such as its law, internal hierarchy, and irrigation infrastructure, whereas *subak* members use both formal and informal *subak* institutions to optimize irrigation. The following paragraphs present a case study where irrigation improvement experts' perceptions collided with local users' attitude towards their irrigation system.

One size does not fit all

Major irrigation infrastructure improvements in Indonesia began in the early 1970s, almost at the same time as the introduction of high-yielding rice varieties. The development of new irrigation regions and the improvement of already existing ones aimed at increasing rice production to meet the needs of the fast-growing Indonesian population. The tremendous increase in irrigated regions in Indonesia brought with it immense operation and maintenance (O&M) costs for the government because the irrigation management was centralized in government offices. In 1989 the O&M costs amounted to 65 billion Rupiahs (US\$ 37 million at that time) per year (Gerards, 1992: 224).

The growing financial burden on the Indonesian government led to the introduction of irrigation service fees (ISF).(2) The objective of the ISF, to be paid by the irrigation water users, was to obtain full cost recovery for O&M cost of the main irrigation infrastructure for systems larger than 500 hectares (Bruns, 1992). However, such a decentralization of responsibilities and financial arrangements required localized irrigation management institutions not yet established in many parts of Indonesia.

The government acted quickly and created water user associations (WUAs) to unite farmers who share a common irrigation infrastructure. Several pilot projects in West, Central and East Java as well as in South Sulawesi and North Sumatra were established in the years 1989-1991. By 1992 the government had transferred more than four hundred irrigation systems to WUAs (FAO, 1993). It was seen as a big success, a win-win situation. On the one hand, the government could pass on O&M costs to the users and on the other hand, an institutional strengthening resulted by creating WUAs which worked closely with government officials in monitoring the irrigation infrastructure. As a consequence, the government extended the ISF to become a nationwide program.

In Bali, the Bali Irrigation Project (BIP) financed by the Asian Development Bank, was launched in 1979. Irrigation facilities were rehabilitated or expanded, integrating smaller irrigation infrastructures into large systems sharing a common permanent weir. Here, there was no need for establishing WUAs. In the *subak* farmers were already cooperating in irrigation management.

The pilot site selected for the ISF program in Bali happened to be the site where we did research in 2004-2005. These *subak* situated in the south central area of Bali were chosen because they are located close to urban centres, already share an irrigation infrastructure, and have an irrigation area of more than five hundred hectares. The government was interested in increasing the economic benefits by strengthening the *subak* because this region is renowned for producing the highest yields in Indonesia. After the selection of the pilot site, the 'socialization' phase of the ISF project began within the *subaks*. This meant informing the *subak* heads that they were chosen for the pilot project and explaining what the project was about. The *subak* heads were then asked to distribute the information amongst the farmers at the *subak* meetings.

An important part of the project was the establishment and strengthening of infrastructural-management institutions: the creation of a regional ISF council consisting of government officials and *subak* representatives, and the administrative body.(3) The six *subaks* which were chosen for the pilot project were to establish a federation with the assistance from the government. This *subak* federation was to strengthen *subak* interaction and, as a result, optimize irrigation management. The ISF council was set up by the end of 1995. The *subaks* were combined into a federation by the end of 1996. Since the six *subaks* share a dam and a primary canal, no infrastructural adjustments had to be made. In the beginning the government was to play the role of the catalyst for the changes with the aim to eventually retreat to form an advisory and supervisory position (Bappeda, 1996).

Three of the six *subak* heads still held their positions by the time we arrived in the field in September 2004. However, it took a while until we found out that they were actually

combined into a federation. None of the *subak* heads ever mentioned it to us. We learned about it two months later when we first met with the local government official involved in the project. During the interview he mentioned the *subak* federation to us. He explained that the *subak* federation was a corporate body which manages water, monitors the infrastructure, has three-monthly meetings and even has a written set of laws. In response we followed up on his information with interviewing the *subak* heads to find out more about the federation. We were expecting excuses as to why they didn't mention their federation- maybe there were conflicts with the government or amongst the *subaks*, and they didn't want to admit to such problems to Western researchers who came from so far to do research on *subaks*. None of this was the case. The *subak* heads were just apathetic and had difficulties putting into words what the *subak* federation was about.

Over time, it became clear to us why the *subak* heads did not show any great interest in their federation. While the creation of WUAs and the introduction of ISF in Java, Sulawesi, and Sumatra had shaped a sense of belonging together amongst the farmers, for Balinese farmers this was already the case. On the other islands the farmers had been empowered to be responsible for their infrastructure rather than relying on the government. In Bali that was already part of the duty of every *subak* member towards their *subak* and it already embodied principles of equality and unity.

Most of the elements which were to be strengthened by implementing the *subak* federation and the ISF had already been part of Balinese *subaks* as long as the farmers could remember. However, one major difference between the other islands and Bali seemed to emerge. Whilst the Javanese farmers saw the changes as acts of decentralization giving them more power, the *subak* heads and *subak* members in Bali saw the institutional strengthening as disempowering interference in their affairs. They weren't aggressively opposed to the government project; they were just not supporting it. Indeed, in 2004 the project was in limbo. Nobody really knew what was going on – and the *subak* heads did not seem to care.

Basically, the creation of the *subak* federation was just putting a formal name on interactions which had already existed for a long time. This, somehow, did not make sense to the *subak* heads - especially the creation of a set of laws for the *subak* federation to guide the *subak* heads in their interactions. Their interactions were embedded in the social texture of the local environment. The *subak* heads did not see any benefit in formalizing these interactions. However, as it is a government requirement that a *subak* federation has a law book, they formulated some regulations by copying the law book from another *subak* federation – just changing the names of the *subak*. In 2005, they finally handed in the set of regulations in order to meet the government requirements. It took them nine years to do so.

The problem with irrigation service fees

In 1996, shortly after the *subak* federation was established the government went about trying to gather the new irrigation service fee from the *subak* members. The heads of *subak* were supposed to get their sub-*subak* heads to gather the money from the sub-*subak* members. But, the majority of the *subak* members were not willing to pay.(4)

A simple argument was brought forward by the farmers: 'Why should we pay an irrigation service fee if we are doing the irrigation servicing ourselves and anyway already pay several fees to the *subak*?'(5) All these fees, the farmers argue, are related to the maintenance of the *subak* – religious, infrastructural, or social. The *subak* members also maintain that they carry out O&M and would like to keep it that way because, if they do it, they know the O&M is of good quality.

Although the *subak* heads expected problems from the government, nothing happened. The ISF was never enforced. One can only assume that the responsible government agencies understood the concerns of the *subak* members. While the WUAs never paid any fees for O&M up until the introduction of the ISF in other parts of Indonesia, the Balinese have always paid fees and been engaged in canal repairs in exchange for receiving their share of irrigation water.

Operation and maintenance responsibilities – confusing simplifications

Part of the national ISF project was to return O&M responsibilities to WUAs. The legal basis was provided by a national regulation of the Ministry of Home Affairs (law 6/1992). Just to remind the reader – the concept was that water users pay a service fee and the government provides infrastructural operation and maintenance services up to the tertiary infrastructure (Gerards, 1992: 227). Translated into a Balinese context this meant that the government was responsible not only for the dam, but also for the primary canal – which the *subak* members believe belongs to several *subaks* –, and the secondary canal – which lies within *subak* territory. *Subak* members see it as their responsibility to operate and maintain these canals. Obviously there is a conflict between national law and the Balinese farmers' perception. This conflict continues to exist with the national government recently reinforcing the regulation. The new national water law 7/2004, article 41, for example, stipulates that the primary and secondary irrigation infrastructure falls under the responsibility of the provincial or regional government. The *subak* heads say it is quite confusing to know who is responsible for what, and as long as this confusion remains unsolved, the *subak* members will have to continue to do the O&M of the entire infrastructure just to make sure that everything is running to their full satisfaction.

Usually, the regional government financially supports larger canal repairs. If the financial support is below one hundred million Rupiahs (US\$ 11,000) the *subak* head can, if he wants, lead the maintenance work and involve the *subak* members if the assembly agrees on it. The *subak* is then responsible for all aspects of the repair work including the book-keeping, the purchase of building materials, the organization of labour requirements, and the reporting to the department of public works. The *subak* also carries full responsibility for the success of the repairs which is particularly related to the finances. If the repairs are done for less than the financial support received, the *subak* can keep the surplus, but if the costs exceed the given amount, the *subak* has to pay the excess out of its own pocket.

If the maintenance work exceeds one hundred million Rupiahs, the Department of Public Works directly tenders the project to a private business and the *subak* is not involved at all. Consequently, the *subak* heads try to keep the proposals below this amount because this allows them to be directly involved in the infrastructural repairs. It

again shows how centrally important the irrigation infrastructure is for *subak* internal organization. It represents the *subak* as a whole and binds adjacent *subaks* together. Naturally the infrastructure is the carrier of the most valuable resource in irrigated agriculture – water. As protective as the *subak* members are in keeping their autonomy in O&M, they are similarly concerned with water flow management.

In summary, we suggest that the national plans to improve irrigation infrastructures by introducing irrigation service fees, creating WUAs, and introducing new national regulations to support all of these measures, have resulted in chaos. The heads of *subak* ask why things have to be made so complicated when, in the end, they operate and maintain their infrastructure like they have always done. Moves to simplify irrigation management by the government have had quite the opposite effect leading to a rather confusing situation amongst local users.

Conclusion

Government agencies entertain the view that to improve irrigation management, there should be a unilateral move from informal to formal institutional settings. Informal institutions are seen as weak links. They believe that to strengthen irrigation management, there would have to be an emphasis on the formal arrangements in decision making, focusing on representation, regularization and formalization. This implies that informal institutions should be gradually replaced by 'modern' arrangements in order to reduce the deficiencies of the 'traditional' (Seabright, 1993).

Underlying these approaches are functionalist assumptions that better institutions can be crafted by policy-makers. Government officials praise the *subak* for its existing structures, such as clear boundaries of the irrigation area, obligatory membership for those who cultivate rice within these boundaries, and clear rules and regulations which *subak* members have to adhere to.⁽⁶⁾ However, they complain that Balinese farmers are strong-headed, which leads to non-compliant behaviour and regular conflicts which in turn negatively affect optimal irrigation management. They lament that authority structures are unclear in a *subak* and that decision making lacks formal regulations.

Yet, for Balinese farmers the authority structures are not ambiguous although they might lack formal construction. Every *subak* member has the authority to make decisions regarding his own rice terraces, respecting of course the jointly agreed arrangements on the sub-*subak* and the *subak* level. The sub-*subak* heads have the formal authority to represent the sub-*subak* members at *subak* level and the informal authority to negotiate water with each other. The *subak* heads have the formal authority to represent their *subak* at inter-*subak* meetings and in inter-*subak* activities. This can be for ceremonies or in dealings with government officials. Informally the *subak* heads have the authority to negotiate water amongst each other in a beneficial way for the *subak* members. In these dealings they are expected to act in the best interest of the *subak* members they represent.

Government officials also tend to perceive the *subak* as hierarchically organized. The *subak* head is perceived to be at the top. He has his sub-*subak* heads who enforce his decisions on the sub-*subak* level, and the *subak* members obey these orders. In reality, however, authority is diversified and most power lies on the terrace level. Such

decentralization is perceived to be impractical if the government wants to have control over irrigation management by using a bureaucratic approach. It seems impossible to situate a government official somewhere in the *subak* management system without disturbing already existing management arrangements. The *subak* members are too intertwined with *subak* matters and their irrigation management is not just a practical matter that can be easily modified, rather, it is embodied in complex relationships focussed on ideas of equality and unity.

The conclusion which emerges from the discussion above is that government intervention will be far more efficient and effective if it encourages and enables a minimum of formal organization on the part of the farmers. The aim for *subak* development should be to avoid unnecessary and expensive institutional overhead. Bruns (1992) argues that an active, successful WUA is one which efficiently and fairly distributes water and maintains and improves the physical infrastructure. The Balinese *subak* already accomplishes these elements – partly in formalized procedures, partly in informal interactions. It is questionable whether it is worthwhile to build up excess capacity to deal with contingencies. Government intervention should be selective and responsive rather than extensive and top-down. Reorganization is not beneficial unless it is based on local initiative and addresses specific local issues. As far as the Balinese *subak* is concerned, it would be wise to assume that current formal and informal *subak* institutions are adequate for effective irrigation management.

Notes

- (1) On a comprehensive assessment on the evolution of irrigation in South and Southeast Asia, see Barker and Molle (2004).
- (2) The Indonesian word for the Irrigation Services Fee is Iuran Pelayanan Irigasi (IPAIR).
- (3) The ISF council was called BAMUS which is the abbreviation for Badan Musyawarah. The administrative body was called SETTAP which stands for Sekretariat Tetap IPAIR.
- (4) *Subaks* are sub-divided into smaller units. Each of these smaller units comprises an average of forty *subak* members who share a tertiary irrigation canal. The *sub-subak head* elected by members out of their ranks represents the *sub-subak* members at the *subak* level and can be consulted when there are conflicts.
- (5) The farmers pay a ritual fee to cover ritual costs; they pay a water fee which is used for infrastructural repairs calculated on how much water their fields receive; and they pay labour-substitute fees if they don't come along to communal labour activities.
- (6) While government officials regard *subak* laws as rigid and formal, *subak* members see them as 'behavioural' guidelines. *Subak* rules are seldom applied in a formal way. Rather, if a problem occurs which cannot be resolved at the terrace level, the head of *subak* can be asked for advice. He can consult the *subak* laws, but usually they are put into the particular context. Elder *subak* members are often asked for advice on how such matters were handled before. Decisions can only be made if the majority of the *subak* members agree with them. This, again, shows the unfamiliarity with practices where a single person such as the head of *subak* can make coercive decisions in a top-down matter.

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