

The Kuk Early Agricultural Site (Papua New Guinea)

No 887

Official name as proposed

by the State Party: The Kuk Early Agricultural Site

Location: Papua New Guinea

Brief description:

The Kuk swamps in the southern highlands of New Guinea, 1,500 metres above sea-level, have been revealed through archaeological excavation to be a landscape of wetland reclamation worked almost continuously for 7,000, and possibly as long as 10,000, years. Man-made ditches and drains have provided evidence for the gradual evolution from plant exploitation of taro and yam on wetland margins around 7,000BP, to organised domestication and cultivation of bananas on drained ground some 4,000 years ago.

This is the earliest, independent agriculture in Oceania and could indicate that the Kuk area contributed to the spread of domesticated plants, and of settlement, culture and societies across the region.

Category of property:

In terms of categories of cultural property set out in Article I of the 1972 World Heritage Convention, this is a *site*. In terms of the *Operational Guidelines for the Implementation of the World Heritage Convention* (2 February 2005) paragraph 47, it is nominated as a *cultural landscape*.

1. BASIC DATA

Included in the Tentative List: 6 June 2006

International Assistance from the World Heritage Fund for preparing the Nomination: None

Date received by the World Heritage Centre: 31 January 2007

Background: It is a new nomination.

Consultations: ICOMOS has consulted its International Scientific Committees on Archaeological Heritage Management and on Historic Gardens - Cultural Landscapes.

Comments on the assessment and management of the natural heritage values of this property were received from IUCN on 13 December 2007 and are related to the following issues:

- Typology of the property
- Comparative analysis

- Boundaries
- Protection
- Management

This information was carefully considered by ICOMOS in reaching the final decision and recommendation in March 2008.

Literature consulted (selection):

Bayliss-Smith, Tim, Golson, Jack, Hughes, Philip, Blong, Russell and Ambrose, Wal, "Archaeological evidence for the Ipomoean Revolution at Kuk swamp, upper Wahgi Valley, Papua New Guinea", in Ballard, C., Brown, P., Bourke, R. M. and Harwood, T. (eds), *The Sweet Potato in Oceania: A Reappraisal*, p. 109–200. Oceania Monograph no 56, Sydney: University of Sydney and Pittsburgh: Department of Anthropology, University of Pittsburgh.

Bayliss-Smith, Tim, *The Meaning of Ditches: Interpreting the Archaeological Record From New Guinea Using Insights From Ethnography*, unpublished chapter.

Denham, T. P., Haberle, S. G., Lentfer, C., Fullagar, R. Field, J. Therin, M. Porch, N. and Winsborough, B., 'Origins of agriculture at Kuk Swamp in the Highlands of New Guinea', *Science* n°301, p. 189–93, (2003).

Technical Evaluation Mission: 10-14 September 2007

Additional information requested and received from the State Party: ICOMOS sent a letter to the State Party on 7 December 2007 requesting clarification on the following issues:

- Timetables for the declaration of the core zone as a conservation area under the Conservation Areas Act (1978) and for the associated formal agreement with the local community for aspects of site management;

- Timetable for the implementation of the community-based management plan;

- Information on whether a formal memorandum of understanding could be established between relevant national, provincial and local government authorities and, if so, when such an agreement might be put in place.

A response was received from the State party on 26 February 2008 and the information provided has been included in this report.

Date of ICOMOS approval of this report: 11 March 2008

2. THE PROPERTY

Description

The Kuk swamps, 1,560 metres above sea level, are in one of the largest inter-montane valleys that run along the highland spine of New Guinea. They appear to have been settled during the late Pleistocene prior to 25,000BP. This may have been made possible by the discovery and exploitation of a rich environment in terms of flora and fauna, particularly along swamp margins of the valley floor.

Extensive excavations over a small part of the site over the past 30 years have revealed evidence of cultivation on the site by at least 7,000BP and possibly as early as 10,000BP, and of a major and independent evolution from plant exploitation to systematic agriculture on drained fields taking place between 7,000 and 4,000BP, the earliest evidence for the domestication of plants in Oceania.

Since then the site appears to have been almost continuously cultivated until the late 1960s when the landscape was drained and converted into a tea plantation and then an agricultural research station. In the past 15 years it has been reoccupied by villagers and there has been a reversion to traditional agricultural practices. The Kuk swamp is now part of an extensive area of intensively cultivated wetland in several densely populated valleys.

Archaeological evidence comes from the excavation of over 200 trenches. Excavations have also taken place at other sites in the highlands and lowlands of New Guinea and these have also revealed early agricultural practices. The Kuk site has been nominated because it has been investigated in the greatest detail, it preserves the greatest number of successive periods of food production, contains the oldest evidence for plant food production and has become the type site for the area.

The roughly rectangular site covers 116 hectares. A buffer zone surrounds the core zone on three sides and extends to 195 hectares.

The nominated property consists of the following:

- *Evidence for early plant exploitation dating back to around 7,000 to 10,000BP*
- *Evidence for the gradual development of systematic agriculture around 7,000–6,400BP*
- *Evidence for the development of drainage ditches from 4,000BP*
- *Evidence for the spread of domesticated plants from the Kuk area*

These are considered separately:

Evidence for early plant exploitation dating back to around 7,000 to 10,000BP

The earliest evidence is still contentious. This comes from deposits below grey clay, created by forest disturbance between 10,000 and 7,000 years ago. The excavated features are consistent with planting and digging pits, localised overland runnels and the staking and support of plants. Those found so far are confined to higher ground. The mode of formation is still debated by archaeologists. Stone tools found are associated with the processing of taro, yam and other starchy and woody plants.

Evidence for the gradual development of systematic agriculture around 7,000 – 6,400BP

The earliest agreed evidence for early agriculture is the truncated bases of cultivation mounds dated to 7,000 to 6,400BP, when cultivation expanded. The region's inhabitants cultivated bananas and yams on the large mounds of soil and taro which could stand wetter ground along the edges and bases of the mounds. The bananas included a wild species from which the world's largest group of domesticated bananas later arose.

At this time grasslands maintained by periodic burning carpeted sections of the valley. They were to persist until 1933 when gold prospectors arrived.

Evidence for the development of drainage ditches from 4,000BP

Crop growing on New Guinea was further refined between 4,350 and 3,980 years ago. Networks of ditches connected to major drainage channels improved banana cultivation in the waterlogged setting. This alignment of ditches changed over time. For the past 2,000 years the ditches defined rectangular plots. This system continued intermittently until approximately 100 years ago.

Evidence for the spread of domesticated plants from the Kuk area

Recent genetic research suggests that bananas were initially domesticated in New Guinea and subsequently spread to Southeast Asia. Plant microfossil evidence from the site corroborates genetic and phytogeographic interpretations that New Guinea was a centre of domestication for banana and yam and thus a centre from which domestication spread. It has been suggested that the New Guinea practices later moved west into Southeast Asia. From there, a hybrid agricultural system featuring both New Guinea-based root crops and Chinese-based rice spread across the Pacific as far as Hawaii, Easter Island, and New Zealand, with root crops eventually gaining favor.

History and development

Until around 100 years ago the Kuk wetlands were farmed traditionally with bananas and root crops grown on land drained by ditches and around the margins of the valley grassland burned periodically to encourage good grazing for animals. This latter practice persisted until the 1930s when Europeans arrived to prospect for gold and as missionaries. The first coffee and tea plantations followed quickly after the access road had been created in the 1950s.

In 1968 the Kuk swamp was leased from the Kawelkas people for 99 years by the Australian colonial administration and a research station was established first for tea and later for other crops. The swamp was drained with parallel drainage trenches across the landscape, and eucalyptus trees planted along parallel roads between experimental plots.

The traditional gardening patterns that existed up until the 1950s were overlaid for a comparatively short period (approximately 40 years). Just before the independence of Papua New Guinea in 1975, archaeological investigations of the newly dug plantation drains were begun under the direction of the Australian National University. For four years until 1977 large-scale excavations revealed traces of ancient drainage systems. With the closure of the Research station in 1991, excavations ceased and local people begun once more to farm the land.

Although the colonial style plantation/research station era of Kuk was a comparatively a short break in traditional cultivation, it appears to have markedly changed the mosaic pattern of gardens and the informal pattern of the drainage networks. The gardening practiced today although re-establishing some traditional practices has also integrated commercial crops such as coffee with traditional food plants and appears to be grided by the drainage trenches of the plantation/research station era.

In 1997 the Papua New Guinea National Museum working with experts from the University of Papua New Guinea started to negotiate for international recognitions of the property as a World Heritage site. Multi-disciplinary investigations were carried out over two years in 1998 and 1999 to re-assess earlier work and to try and establish firm dating.

The Kuk Early Agricultural Site values

The values of the nominated site are related to the evidence it encapsulates for early agriculture.

3. OUTSTANDING UNIVERSAL VALUE, INTEGRITY AND AUTHENTICITY

Integrity and Authenticity

Integrity

Archaeological investigations have been intensive rather than extensive and excavations have affected only a minor proportion of the core area of the site. Modern farming activities at Kuk are oriented towards manual (i.e. not mechanized) cash-cropping as well as family subsistence. Both remain relatively low-key and do not intrude upon the archaeological features of the site. A considerable proportion of the site lies unexcavated with the only major intrusion being the trenching that was done in the 1970s to drain the swamp for a tea plantation. These trenches facilitated archaeological research but no doubt also disturbed significant deposits. However, the vast majority of the archaeological remains are intact and there are no foreseeable real threats to the integrity of the remains.

Authenticity

The site's authenticity may be said to relate to detailed long-term multidisciplinary scientific research and to the continuation of certain contemporary land-use practices. The excavations and scientific work that have been done at the site are of the highest international professional

standard and thus the excavated remains retain their authenticity.

By agreement with local land-owners, contemporary land-use has been restricted to modern versions of traditional activities of the sort represented in the site's archaeological deposits. This is not a continuation of traditional practice but a re-introduction of appropriate practice. This land management helps explain the significance of the archaeological deposit rather than being part of its outstanding universal value. Its authenticity is therefore supplementary and supportive to the authenticity of the core evidence on the site.

ICOMOS considers that the conditions of integrity and authenticity have been met for the archaeological remains and the landscape surroundings.

Comparative analysis

Agriculture – the systematic production of crops – perhaps the most significant social and technological change undertaken by modern humans, has transformed human history over the past 10,000 years. Its early origins are hardly represented on the list. In El Salvador, the Joya de Ceren Archaeological Site (inscribed on the World Heritage List in 1993) preserves remains of early farming beneath volcanic ash, while the Ban Chiang Archaeological Site in Thailand (inscribed on the World Heritage List in 1992) charts the transition from pre-agricultural to agricultural subsistence.

Other sites associated with agriculture are landscapes related to distinctive crops such as coffees, rice and tobacco; landscape associated with irrigation techniques.

IUCN considers that: "this nomination lays out a convincing rationale for nomination of the property as a "combined work of man and nature" by showing how the development of agriculture changed both natural and cultural systems through evolving interactive processes. However, IUCN notes that there are many sites in the Pacific and worldwide which would demonstrate this interaction. Thus a comparative analysis is needed to show that this site is the best of its kind."

ICOMOS considers that the Kuk Early Agricultural Site as well as presenting evidence for the transformation to organised agriculture associated with drainage systems, is also the best documented local landscape with ancient cultivation of the Papuan staple taro (*Colocasia esculenta*) - so old that it pre-dates most other world evidence of the domestication of crops, whether in China, the Middle East or the Americas.

It cannot be proved, as suggested in the nomination dossier that agricultural techniques developed at Kuk spread around the Pacific. Kuk is like a dip-stick displaying a fragment of evidence, albeit a persistent picture from one site. Also the claim that the Pacific is unique in terms of the vegetative reproduction of plants needs to be tempered by recent information that there may be a second centre of development of the yam (*Discorea* sp.) in western Africa.

Nevertheless ICOMOS considers that the Kuk site adds to knowledge of the development of agricultural exploitation of root crops, and further evidence from the region to challenge its pre-eminent position is unlikely, given the comparative paucity of remaining wetland sites that might have preserved evidence. Kuk complements rather than competes with the two other inscribed sites reflecting early agriculture.

ICOMOS considers that the comparative analysis justifies consideration of this property for the inscription on the World Heritage List.

Justification of the Outstanding Universal Value

The nominated property is considered by the State Party to be of Outstanding Universal Value as a cultural landscape for the following reasons:

The Kuk swamp provides well preserved archaeological evidence of:

- An independent technological leap transforming plant exploitation to agriculture around 7,000 -6,400 years ago.
- The early development of specifically Pacific agriculture based on vegetative propagation of bananas, taro and yam.
- Transformation of agricultural practices over time from mounds on wetland margins around 7,000-6,400 years ago to drainage of the wetlands through digging of ditches with wooden tools from 4,000BP to the present.
- The evolution of an agricultural landscape from 10,000BP to the present day, associated with egalitarian, non-hierarchical societies.

The property is nominated as both an evolving cultural landscape and a relict one. ICOMOS considers that its outstanding universal value is associated with archaeological evidence and hence it is appropriate to consider this a relict landscape. The site is still farmed in a traditional way, but this farming has been re-introduced and modified from traditional practices and, although this is compatible with the archaeological evidence and provides a very appropriate context for understanding the archaeological remains, it is in itself not of outstanding value. Therefore ICOMOS considers that the site should not be considered as an evolving cultural landscape, where it is the processes that are of value and are being sustained for their impact on the landscape, but a relict cultural landscape.

Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (iii), (iv) and (v).

Criterion (iii): bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.

This criterion is justified by the State Party on the grounds that Kuk swamp preserves archaeological, archaeobotanical and palaeoecological remains that provide evidence for the long development and persistence of asexual vegetative propagation of plants, such as taro, yam and bananas.

ICOMOS considers that the significance of the remarkable persistence over 7,000 to 10,000 years of agriculture on the site is more appropriately acknowledged under criterion (iv).

However ICOMOS considers that the extent of the evidence of early agriculture on the site can be seen as an exceptional testimony to a type of exploitation of the land which reflects the culture of early man in the region.

ICOMOS considers that this criterion has been justified.

Criterion (iv): be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

This criterion is justified by the State Party on the grounds that archaeological evidence has demonstrated that Kuk is one of the few places in the world where agriculture developed independently.

ICOMOS considers that the development of domesticated plants and their systematic exploitation as agriculture is a significant stage in human history.

ICOMOS considers that this criterion has been justified.

Criterion (v): be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change.

This criterion is justified by the State Party on the grounds that the Kuk swamp reflects successive periods of plant exploitation from 10,000 years ago to the present.

ICOMOS considers that the swamp is a remarkable example of persistent but episodic traditional land-use and practices where the genesis of that land-use can be established and changes in practice over time demonstrated. The site is however not of value for the present day agricultural practices, so much as for the evidence of past practices.

ICOMOS considers that this criterion has not been justified.

ICOMOS considers that the nominated property meets criteria (iii) and (iv) and that the Outstanding Universal Value has been demonstrated.

4. FACTORS AFFECTING THE PROPERTY

Building

Buried archaeological remains can be damaged by building activities and particularly by the digging of latrines. Although new buildings have been constructed on the sites since the 1990s, these are of relatively light-weight traditional construction and so far few latrines have been constructed. In the future, modern materials could cause significant problems in the core and buffer areas.

Population pressure

The population of the area is increasing and this had already had an effect on the vegetation of the surrounding hills. In the future, more people could lead to a demand for more intensive agriculture and even outside the nominated area this could impact on the overall water-table of the valley.

Drains

Re-drainage of the adjacent Tibi tea plantation could impact on the site. This is considered to be unlikely in the short-to-medium term – but not ruled out.

Crops

Deep rooted crops could cause damage to buried remains. Villagers mostly cultivate traditional root crops, but in some place more deep rooted coffee is grown. Since 1998 the Kawelka clan has voluntarily agreed not to plant deep rooted plants or dig deep drains.

When the Research station was operating tea crops were grown and eucalyptus tree planted along the roadways – both damaging to remains. In recent years tea has given way to more traditional crops and the eucalyptus trees are being felled. No new eucalyptus trees should be planted.

Rising water tables

Since the abandonment of the Research Station the water tables have been rising as drains have not been cleared. This has led to water logging of some areas and their abandonment for cultivation. This preserves buried deposits but changes the appearance of the landscape. Future management needs to ensure that the wetland does not dry out but must ensure sufficient dryness to allow cultivation.

Impact of climate change

Climate change could either mean very dry conditions that could impact adversely on the buried remains, or more water that raises the water level, or even floods part of the area. The former would cause considerable problems for the area.

Risk preparedness

The main major risks are volcanic activity of Mount Hagan, now considered to be extinct, and earthquakes and neither of these are likely to impact heavily on buried remains although could be devastating to the local

communities. There are no plans to deal with these eventualities.

ICOMOS considers that the main threats to the property are intensification of agriculture, deep-rooted crops, re-drainage of adjacent tea plantation, and changes to modern building materials; none of these threats can be removed: all will need actively managing, hence the need for the management plan to be implemented.

5. PROTECTION, CONSERVATION AND MANAGEMENT

Boundaries of the nominated property and buffer zone

The nominated property forms the southeastern corner of the former Agricultural Research Station. The 116-hectare core zone is appropriate in terms of the nature and location of the archaeological features. The proposed site is restricted to the area that has been intensively studied to understand the early and independent development of agriculture in the Pacific.

The dossier states that the development of agriculture in this area evolved from undisturbed lower montane rainforest to a disturbed mosaic of secondary forest, grassland and garden sites; and finally to grasslands and cultivated landscapes.

IUCN considers that: “it would seem appropriate that the nominated area include sites that are representative of each of these different phases, perhaps as serial sites. The currently nominated Kuk site represents the latest phase of grasslands and cultivated landscapes, but additional sites might be included in the nomination that represent the baseline of undisturbed lower montane rainforest, and the intermediate mosaic phase. Having each of these three representative areas would enhance the potential of this site to fully present and interpret early and independent development of Pacific agriculture.”

ICOMOS supports this view but considers that these additional areas could be added in the future as a serial nomination if appropriately protected areas could be identified.

Situated to the north and west of the core area, the 195-hectare buffer zone comprises the remainder of the Agricultural Research Station. The buffer zone cannot be continued around the eastern or southern margins of the Research Station owing to major issues with land tenure.

The buffer zone includes archaeological remains of cultural significance. There is no systematic difference at present between land-use in the buffer zone and that in the core area. The buffer zone does not extend to the hills around.

There is a long-established tea plantation immediately to the east, but even if it were re-developed this area is most likely to be used for subsistence gardening and small-scale cash-cropping of the sort practiced at Kuk itself. Moreover, the tea plantation is separated from the Kuk site by a watercourse/drain and then a track along the Research Station boundary. The high ground that lies to

the south of the core area is partly separated from the site by the same watercourse/drain.

The setting of the site clearly extends beyond the rectangular lines of the buffer zone in the plain to the hills beyond. Currently these areas do not seem to present development threats in the short and possibly medium term, but without any protection, the wider setting and the context for the swamp as part of a highland landscape valley could be vulnerable in the long-term.

ICOMOS would like to see a commitment to planning policies that could protect the wider setting and to extending the buffer zone around the whole site, as land tenure issues are resolved.

ICOMOS considers that the boundaries of the core zone are adequate but would like to see commitment to putting in place planning policies to protect the wider setting and to extending the buffer zone as land tenure issues are resolved.

Ownership

Legal ownership of the core and buffer zone - that is the extent of the former Kuk Agricultural Research Station - is vested in the Government of Papua New Guinea until 2067, under the terms of a 99-year lease negotiated with local land-owners by the Australian colonial administration. The Papua New Guinea authorities abandoned the Research Station about 15 years after independence in 1975, and the site was then reoccupied by its local customary owners, the Kawelka clan.

It is envisaged that local occupiers will be confirmed as legitimate farmers in the area as part of an agreement under which they will help implement the agreed Management Plan once the site is declared a Conservation Area (see below). This has not yet been achieved.

Protection

Legal Protection

Three legal instruments are proposed to protect the values of the site. These are the *National Cultural Property (Preservation) Act* and associated *Regulations (1965)*, as well as the national *Conservation Areas Act (1978)* and the national *Organic Law on Provincial and Local Level Governments (1995/1997)*.

The first of these is in place: the *National Cultural Property (Preservation) Act* and *Regulations (1965)* currently protect Kuk as national cultural property of "particular importance to the cultural heritage of the country". This is the highest level of cultural heritage protection normally afforded by Papua New Guinea legislation.

The nomination dossier sets out the aim to augmented protection for the site first by its declaration as a conservation area under the *Conservation Areas Act (1978)*. This means that it will be subject to a formal land-management agreement ratified by the national

government and the local community. This agreement will prevent any further alienation of land from customary land-owners and prevent land tenure disputes. It is anticipated that achieving Conservation Area status will take at least until early 2009.

Secondly it is proposed that the World Heritage management plan "will be voluntarily enshrined [by the customary land-owners] in an 'Organic Law' using the *Organic Law on Provincial and Local Level Governments (1995/1997)*". The latter gives local people the power to generate nationally-binding law to protect their natural and cultural resources. The relevant Organic Law is currently being drafted. It is anticipated that the Law should be in place by the end of 2008.

Traditional Protection

Customary farming practices are clearly a crucial strand in the protection of the property – as envisaged in the Management Plan.

Effectiveness of protection measures

In order that the local community is confirmed in its central position as land managers, ICOMOS considers that it is essential that the Conservation Area status and its concomitant plans are implemented before inscription, thus making the Management Plan operational.

ICOMOS considers that the legal protection in place is adequate, but that the customary protection needs confirming through the designation of the property as a Conservation Area and through the associated formal land management agreement with the local community for aspects of site management.

Conservation

Inventories, recording, research

There are few sites that are as well researched or recorded as Kuk.

Present state of conservation

The archaeological remains are all well preserved underground.

Active Conservation measures

The only way the archaeological remains will be preserved is if they are maintained water logged. Active measures mean at this site ensuring constraints are in place to prevent drainage of the bog through deep drains or deep-rooted plants and trees.

ICOMOS considers that conservation and conservation measures are adequate.

Management

Management structures and processes, including traditional management processes

Local site management strategies entailing the participation of customary land-owners are in place. All stakeholders appear to share a thorough understanding of the nominated property and of the nomination process and its implications for the future of the site.

Currently there is no formal agreement between relevant local, provincial and national government authorities. ICOMOS considers that such a link needs to be formalised as soon as possible. In its supplementary information, the State Party has indicated that although such a formal link was not originally envisaged, a Memorandum of Understanding could be put in place by mid 2008 as part of the process for establishing Organic Law.

Policy framework: management plans and arrangements, including visitor management and presentation

The nomination dossier details an operational and institutional framework for a World Heritage management plan that will build on these current structures and practices. The plan will provide an accountable, transparent mechanism that ensures long-term protection of the outstanding universal values of the site through participatory means. However it remains to be completed and implemented. This is identified in the nomination document as a critical process that has yet to be completed (p. 2). It was stated that the Plan would be completed in collaboration with international specialists by July 2007. At the time of the Mission in September 2007 this had not been achieved. Information subsequently provided by the State Party states that the Plan once completed will be put to the Kawelka landowners for their formal approval as part of the process for adopting Organic Law. It is anticipated that this process will be complete by mid-2008.

The plan will bring traditional and modern methods together in daily as well as medium and long-term planning, implementation, monitoring, evaluation and feedback. Local people will be recruited in consultation with key customary land-owners to undertake day-to-day monitoring of the site under the terms of the locally-generated 'Organic Law'. This local participation is the foundation stone upon which the success of the entire project rests and has been very well thought through. It will be carefully structured to accommodate all major Kawelka clans in an equitable manner.

At the time of the mission, there was still considerable work needed to reach the point where customary land-owners would agree in detail to the proposed arrangements, even though they have agreed in principle.

No information about the excavations is provided for residents or to visitors on the site. Although the nomination makes it clear that tourism is currently not an option, given the comparatively unstable situation in the highlands, and although the present community was widely involved in the excavations and nomination process, it would be desirable to allow for an

understanding of significance of the site to be recorded for future generations.

On management issue, IUCN "commends the development of an appropriate type of engagement with the current occupants and managers of the site, integrating local indigenous governance structures with the requirements for management of a World Heritage site. IUCN notes, however, that the Government of Papua New Guinea has neither completed declaration of a Conservation Area for the site nor the formalization of management through an Organic Law, and urges the Government to do so. The nomination notes potential sources of funding for management of the site, but longer term financing issues need to be addressed."

Involvement of the local communities

The management process ensures the co-operation of local communities in the protection of the property.

Resources, including staffing levels, expertise and training

Despite the well-designed management process and the enthusiasm at all levels to carry the Kuk nomination forward, professional heritage management capacity remains limited. All involved in the site acknowledge the need for basic heritage management training at all levels. The very considerable effort that has been invested in the nomination will come not be repaid if at least a minimal level of training (including continuing in-service refresher and up-skilling programs) cannot be guaranteed. Commitment is needed to providing this basic, necessary training.

ICOMOS considers that a commitment needs to be made to producing resources for heritage management training to local people, and appropriate local, provincial and national government officers.

ICOMOS commends the work that has been achieved to bring stakeholders together and draft the first stage of a management plan., ICOMOS considers that it is essential that the plan is now completed as soon as possible and formally implemented, that a formal memoranda of understanding among relevant national, provincial and local government authorities and other stakeholders concerning management responsibilities on the ground and reporting lines be established, and that resources are found to provide heritage management training to local people, and appropriate local, provincial and national government officers. ICOMOS would also recommend that more information is made available to local communities to allow full understanding of the site, both now and in the future.

6. MONITORING

Monitoring arrangements have been put in place to ensure archaeological deposits are preserved. These include day-to-day monitoring of land-use by local land-owners, bi-annual assessment of water tables and land-use by local heritage officers, and every five years social mapping and land-use assessment by specialists, as well as emergency monitoring in response to specific threats.

ICOMOS considers that monitoring arrangements are adequate.

7. CONCLUSIONS

There is strong support for World Heritage nomination from local customary land-owners as well as from provincial and national government authorities. There is adequate legislative protection of the site at the national level at present and current participatory management strategies for the site are working successfully at the local level.

Nevertheless, some significant management issues remain to be finalized. In particular the customary protection of the site must be confirmed through appropriate Conservation area designation – as described in the nomination dossier – and the management plan that has been devised to ensure the co-operation of local traditional people in the protection of the site's World Heritage values over the long-term needs to be completed and implemented and it would be desirable for a formal agreement between relevant local, provincial and national government authorities put in place.

The State Party has indicated that Conservation Area status will take at least until early 2009, that completion of the Management Plan and its approval can be achieved by mid 2008 and that its adoption as part of Organic Law can be achieved by the end of 2008.

Recommendations with respect to inscription

ICOMOS recommends that the nomination of The Kuk Early Agricultural Site, Papua New Guinea, be inscribed as a relict cultural landscape on the basis of *criteria (iii) and (iv)*.

ICOMOS further recommends that the State Party be requested to submit by 1st February 2009:

- The completed Management Plan and confirmation of its approval by the Kawelka landowners, and of its implementation;
- Progress with the establishments of Organic Law;
- Progress with designation of the property as a Conservation Area, and of the associated formal land management agreement with the local community for aspects of site management;
- Progress with the establishment of a formal memorandum of understanding between relevant national, provincial and local government authorities and other stakeholders concerning management responsibilities on the ground and reporting lines.

ICOMOS requests the State Party to provide a commitment to:

-Resource heritage management training to local people and appropriate local, provincial and national government officers.

-Putting in place planning policies to protect the wider setting and to extending the buffer zone as land tenure issues are resolved.

Recommended Statement of Outstanding Universal Value

The Kuk Early Agricultural Site, Papua New Guinea, has outstanding universal value for the well-preserved buried archaeological evidence which demonstrates:

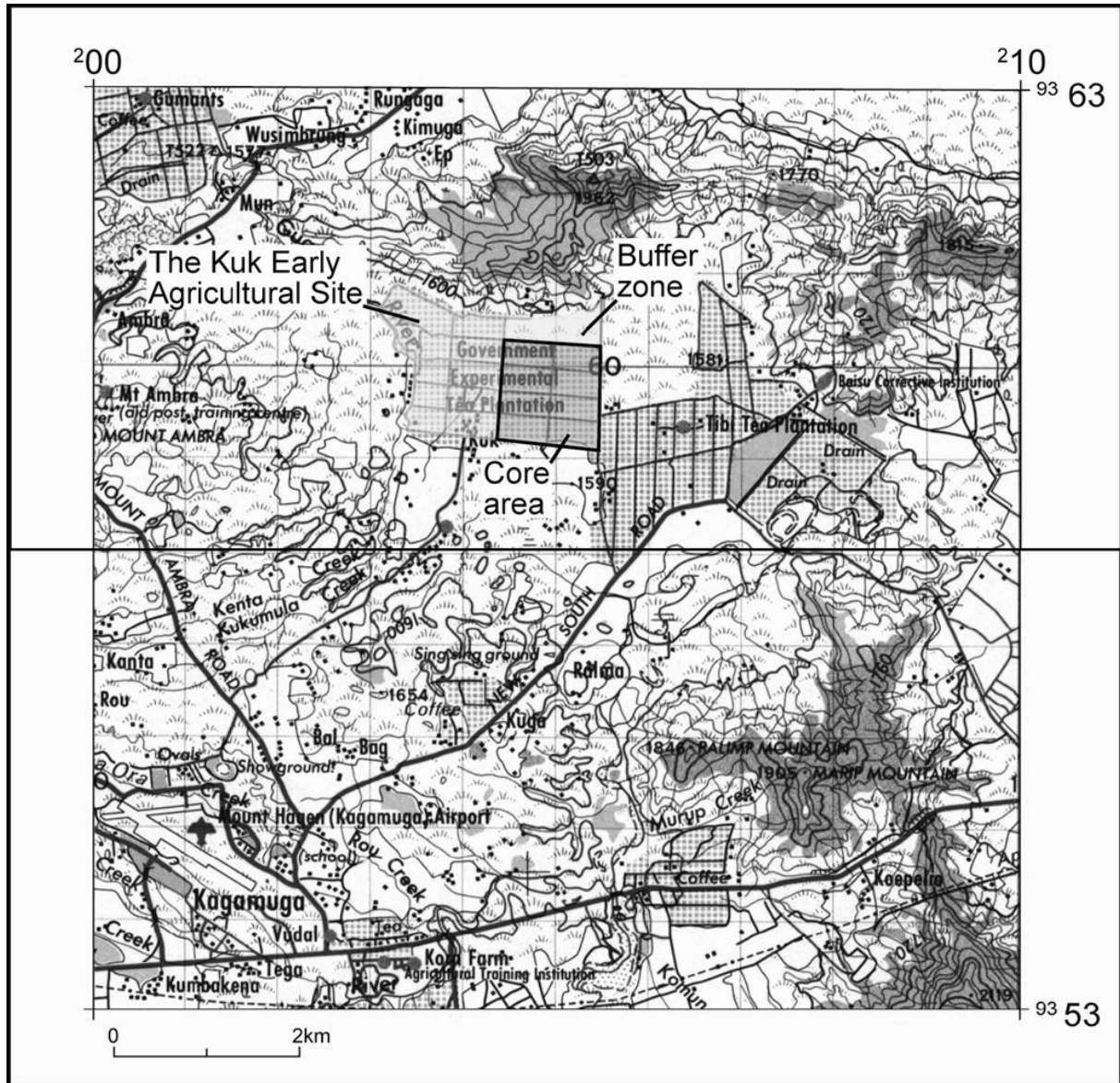
- An independent technological leap transforming plant exploitation to agriculture around 7,000-6,400 years ago, based on vegetative propagation of bananas, taro and yam.
- Transformation of agricultural practices over time from mounds on wetland margins around 7,000-6,400 years ago to drainage of the wetlands through digging of ditches with wooden tools from 4,000BP to the present.
- Remarkably persistent but episodic traditional land-use and practices where the genesis of that land-use can be established and changes in practice over time demonstrated from possibly as early as 10,000BP to the present day.

Criterion (iii): The extent of the evidence of early agriculture on the Kuk site can be seen as an exceptional testimony to a type of exploitation of the land which reflects the culture of early man in the region.

Criterion (iv): Kuk is one of the few places in the world where archaeological evidence suggests independent agricultural development and changes in agricultural practice over a 7,000 and possibly a 10,000 year time span.

Archaeological investigations have been intensive rather than extensive and excavations have affected only a minor proportion of the core area of the site. Modern farming activities at Kuk remain relatively low-key and do not intrude upon the archaeological features of the site. The integrity of the site is thus maintained. The excavations and scientific work that have been done at the site are of the highest international professional standard and thus the excavated remains retain their authenticity. Contemporary land-use has been restricted to modern versions of traditional activities and is supportive to the authenticity of the core evidence on the site.

The legal protection in place is adequate, but customary protection needs confirming as soon as possible through the designation of the property as a Conservation Area and through the associated formal land management agreement with the local community for aspects of site management. The Management Plan should be completed as soon as possible and formally resources and implemented, and a formal memoranda of understanding established among relevant national, provincial and local government authorities and other stakeholders concerning management responsibilities on the ground and reporting lines.



Map showing the boundaries of the nominated property



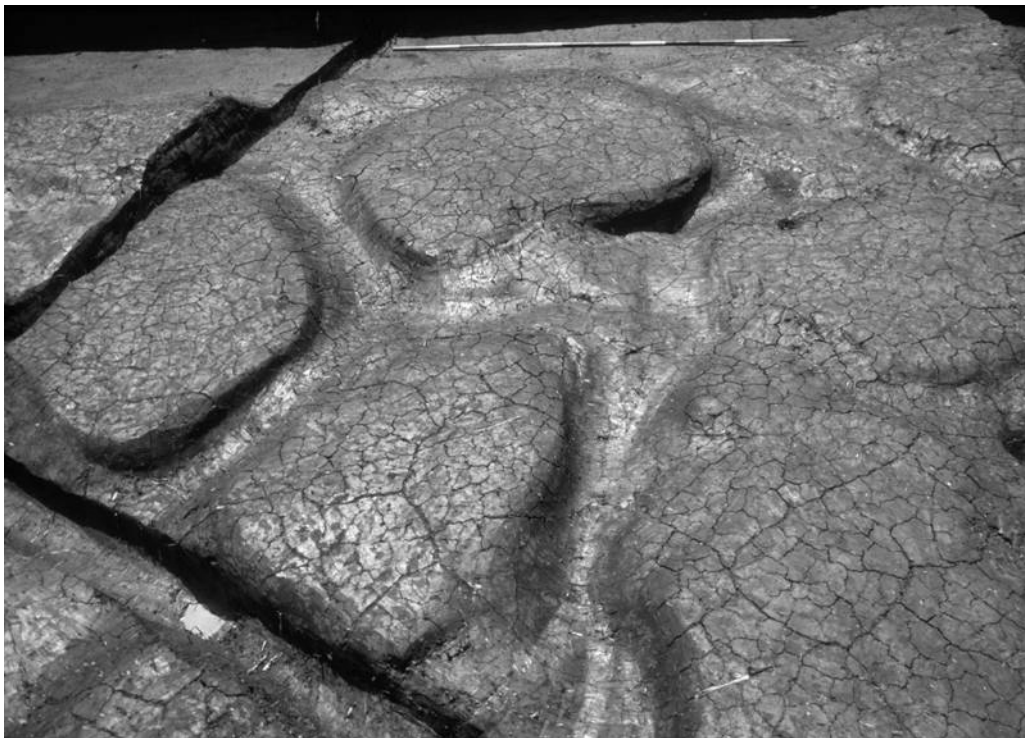
Characteristic agricultural landscape of the Upper Wahgi valley



Man-made ditches



Trench containing multiple cross cutting ditches belonging to phase 3 and 5



Trench containing the preserved bases of Phase 2 cultivation mounds