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Management Review

Ujung Kulon National Park West Java Indonesia

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**Research and Development Centre for Biology-LIPI
and Forest Protection and Nature Conservation - PHPA**

Draft recommendations for consultation

Note: This document contains the main objectives and specific recommendations resulting from the review as well as detailed justifications and plans for implementing the recommendations. A full report will be produced following the consultation process.

PATRON: HER MAJESTY THE QUEEN

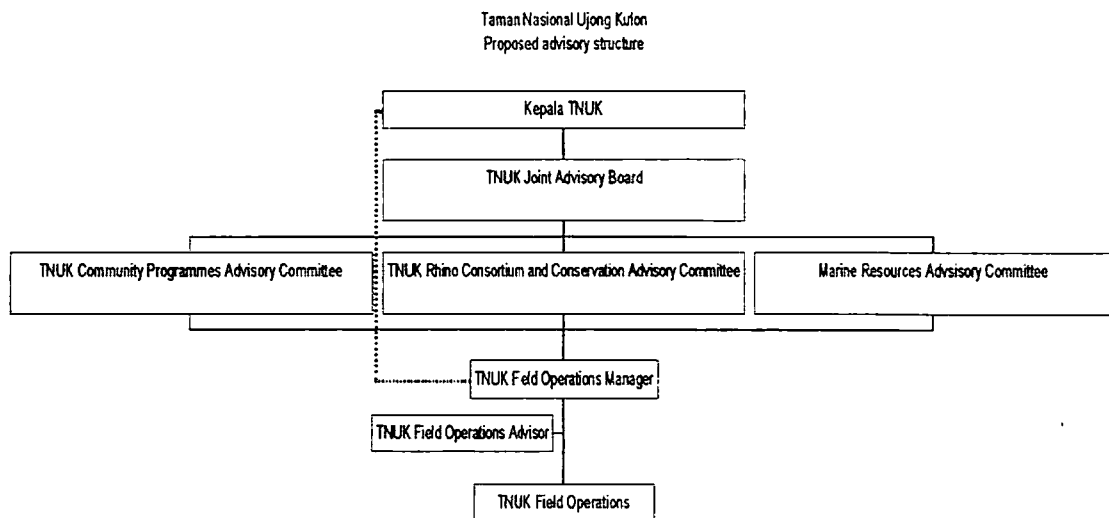
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INSTITUTIONAL RECOMMENDATIONS

IN1. To develop further the existing mechanism for supporting and advising the management of the Park.

IN1.1 The current model of the Rhino consortium should be developed to form a comprehensive support and advisory structure for Park management (The Ujung Kulon Joint Advisory Board). This structure is intended to complement, not to substitute existing management structures.

The following structure should be adopted:



Detailed terms of reference should be developed for each level based on the following notes:

Joint Advisory Board.

Membership: Kepala TNUK, Representatives from Community Programmes Advisory Committee and Rhino Consortium and Conservation Advisory Committee and the Marine Resources Committee. Other members to be decided.

Meetings: Twice per year

Key Roles:

- Review and monitor Park operational management and support programme.
- Make recommendations and provide support and advice for the production of 5 year and one year management plans.
- Receive reports from the three sub committees.
- Review progress towards proposals of this report.
- Seek and coordinate funding and other forms of external support for the Park.
- Produce a feasibility study for establishing Parastatal status for the Park

**Rhino Consortium and Conservation Advisory Committee
Community Programmes Advisory Committee
Marine Resources Advisory Committee**

Membership

Specialists from key stakeholder groups (including local communities on the Community Programmes Advisory Committee). Co-opted advisors.

Meetings: All three groups to meet on the same day four times per year. Brief plenary session to be held at the end of separate sessions.

Key Roles

- Coordinate all relevant research activities and programmes proposed by external stakeholders.
- Discuss relevant issues and make formal recommendations for future programmes.
- Seek funding and support.
- Review results of research activities and programmes.
- Report to Joint Advisory Committee.

IN1.2 A field based advisory and support team (the Field Operations Team) should be appointed to support field managers in operational matters. The team should consist of a Field Operations Manager and a Field Operations Adviser

These two posts are crucial to solving many of the problems identified in this report. They fill the missing link between strategic and administrative management based at Labuan and Park operations currently based at Tamanjaya. When the three Park sections are created in 1998 the Field Operations Advisory Team will form a crucial link in the communication and support chain between Labuan and the three section HQs.

The Field Operations Manager post does exist at present, but the role should be clarified and strengthened. Under the new organisational structure this post does not exist, but it is essential that this post is retained.

The Field Operations Adviser should be a temporary external appointment for a period of three years and should act as a counterpart to the Operations Manager. He/she should be experienced in Protected Area operations management. Ideally an Indonesian should be appointed to post but an appropriately qualified foreign consultant could be considered. External assistance should be sought for this post.

The Field Operations Team should be based permanently in Tamanjaya and spend at least 75% of their time there, regularly visiting all Park sections. Details of their key roles are listed in Section IN2.1 below.

IN2 To revise and clarify staff roles and responsibilities and increase staff capacity to carry them out.

IN2.1 The operational management team, under the management of the Kepala TNUK and the guidance of the Joint Advisory Board should work to provide day to day guidance and support for all field staff and to monitor and provide feedback on staff performance.

The team should have the following responsibilities:

General responsibilities

Day to day supervision of field operations in conjunction with local management. To include:

- Day to day management of all field activities.
- Team building activities with Park staff
- Regular monitoring of staff performance and activities to include a programme of scheduled and unscheduled visits to all guard posts and accompanying staff teams in the field.
- Overseeing the field Staff training and continuing education programmes (see IN3)
- Monitoring all research activities and externally supported initiatives.
- Working closely with Section Leaders to manage staff and resources.

Specific outputs

The team will be expected to complete the following work, under the management of the Park Manager and with guidance from the Joint Advisory Board and its sub committees:

- Production of detailed plans, schedules and duties for Park patrol activities and enforcement work.
- Functional analysis of work requirements and clear descriptions of basic duties for all Park field staff and of additional duties which should attract bonus or incentive payments. To include measurable standards for work outputs.
- Recommendations for revision of the incentive and credit scheme to reward measurable performance outputs.
- Introduction of a career development structure for all staff based on performance and achievement. Phasing out of unstructured staff reallocations.
- Coordination of training and staff development activities.
- Creation of structured work teams within the Park staff and provision of support for team leaders.

IN2.2 The Park should recognise officially the role of team leader, defined as the individual who is responsible for leading and supervising a team of Jagawana based at a guard post. These posts should receive special responsibility incentives and additional training.

At present there is no recognition of the role of team leader, possibly the most important post in terms of day to day effectiveness of field staff. These staff should be identified, trained and paid a substantial incentive based on the performance of their team. Specifically they should be responsible for:

- Ensuring all patrol schedules and responsibilities are fulfilled.
- Ensuring output targets are met.
- Helping Jagawana to fill out reports.
- Reporting to the head of section.

IN2.3 The Park should develop the role of Specialist Ranger for staff with particular aptitude and ability for specialist areas of work.

The following roles should be established

- Interpretive ranger
- Research and wildlife ranger
- Community ranger
- Forest ranger

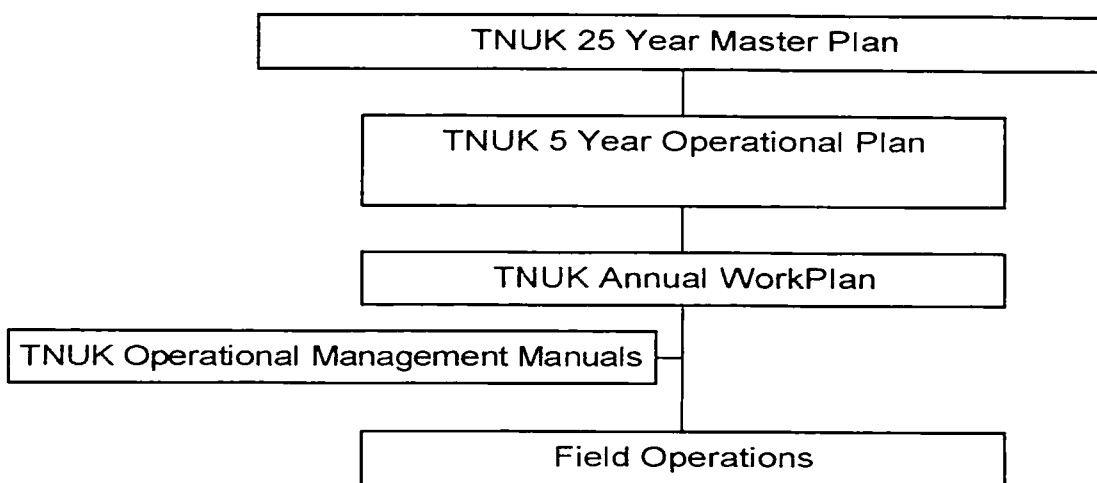
Performance based criteria should be developed by the Field Operations Team for these roles, which should involve successful completion of training and actual demonstration of competence in the field.

These staff should be eligible for incentives once qualified.

IN3. To improve management practices, with particular attention to personnel, resource and operational management.

IN3.1 The activities of the Joint Advisory Board, its sub-committees and of the Field Operations Team should lead to the production of a detailed Procedures Plan and Park management manual to complement the existing management planning process as follows:

TNUK Management Planning Structure



The documents should act as manuals to guide and support the day to day management of Park operations. They should be clearly written, accessible and comprehensive, but concise working documents.

The operational manual, intended for distribution to all staff should include:

- Information about the Park
- Information about local communities
- A summary of the Parks strategic and operational objectives
- Maps
- Wildlife identification information
- Event recording information
- Descriptions of duties at all field levels
- Descriptions of incentive schemes and of disciplinary procedures
- Procedures for dealing with a variety of situations
- Patrol routes and patrolling requirements
- Code of practice for staff
- Code of practice for visitors
- Important dates and deadlines for reporting, meetings etc.

The Park Management Manual, for all staff of Level 3 and above should contain:

- All information in the operational manual.
- A summary of the Park management plan and timetable for implementation.
- All existing procedures and those developed under this proposal.

Initial planning for the documents should involve workshop facilitated by a Park Planning expert. External support should be sought for these workshops. Final work on the manual should be carried out by the Field Operations Team and senior Park management.

IN3.2 The operational management team should act as a liaison between Tamanjaya office and Labuan office over operational matters. In particular requisition of materials and supplies, payment of incentives and processing of paperwork.

A written and agreed set of procedures should be produced.

IN3.3 Initiate an in service training programme in management skills.

- The following courses should be held for the Kepala TNUK and middle managers as a matter of urgency:

Personnel Management.

Resource Management.

The course should lead to a plan which will lead to the improved supply of resources to the Park.

- A further course should be held for all Park staff with management or supervisory responsibility.

Supervisory management, team building and leadership skills

An independent external trainer should be engaged to carry out the training and to organise a programme of follow up and review activities.

- Tuition of English in Tamanjaya should be resumed for local people, Park staff and guides

Appointment of an Indonesian tutor would require external financial support. An alternative would be to find a full time volunteer from one of the International volunteer agencies. An appropriate volunteer could combine English teaching and ecotourism support and training work.

IN3.4 Design and initiate a continuing training and education programme for Jagawana and other field staff.

A full syllabus should be prepared by the Field Operations Team to provide an ongoing programme of education, training and personal development for Park staff.

Key elements of the syllabus should include:

- Staff duties and responsibilities.
- Natural history and wildlife identification.
- Reporting and administration.
- Literacy and numeracy.
- Personal finance management.

There should also be a range of specialist programmes:

- English language
- Scientific ranger skills
- Interpretive ranger skills
- Community ranger skills
- Patrol ranger skills

The programme should be delivered on site or in Tamanjaya or at section HQs. It should be highly vocational and competence based. Staff who can demonstrate that they have reached the required standard should be rewarded with:

Right to wear a special badge.

Positive incentive. Either through a new scheme or through allocation of a substantial number of credits on the functional credit scheme.

Right to work in specialist area, with the associated benefits.

IN4. To improve the infrastructure at TNUK to ensure continued efficiency and effectiveness of field operations

IN4.1 Carry out a feasibility study for the supply of guns for rangers who have performed well and received appropriate training. The right to carry a weapon should be directly linked to the incentive scheme.

Staff have made a good argument for being armed, but this should be promoted as a privilege. The right to carry a gun should be linked to outstanding performance and participation in appropriate training.

IN4.2 Relocation of one 4wd vehicle from Labuan to Tamanjaya.

Alternatively a new vehicle should be obtained for the Tamanjaya office

IN4.3 The operations team should produce a fully budgeted maintenance schedule for all infrastructure and equipment, together with a system for recording and checking maintenance.

There is a maintenance schedule in place, but it is not being rigorously checked in the field.

**IN5. To relocate when practicable the operational Park HQ to
Tamanjaya**

This solution has been proposed in several reports. Current infrastructure improvements make it more feasible. In addition the changes in the Park organisation structure make this an essential medium term aim. The provision of the operational management team is a temporary solution and there are some things that can be done at once.

IN5.1 The Park should support and actively encourage the ongoing provision of telephone and electricity cables to Tamanjaya.

This process has started, but should be encouraged at all possible levels.

IN5.2 The Park should support the partial improvement of the road to Tamanjaya.

Full upgrading of the road is very expensive and improved access may lead to problems. At the minimum a road grading machine or a bulldozer and a road roller should be used annually and as necessary to grade and level the road.

IN5.3 The Park should create a Park gateway on the road near Sumur to provide information, to control and check vehicles which may be involved in illegal activities and to check visitor passes.

The gateway could be under the management of the Sumur section.

IN5.4 The interpretation centre and visitor information service should remain at Labuan.

IN5.5 A feasibility study should begin at once for the full relocation of the Park management HQ to Tamanjaya, with the aim of full relocation before the year 2000.

LOCAL COMMUNITY RECOMMENDATIONS

These recommendations do not form a full programme of socio economic development for the Park, but are a limited set of recommendations designed to address issues specifically relevant to the terms of reference of the mission.

C1. To encourage and support the continuation and expansion of NGO activities and to improve integration of these with Park and Government initiatives.

C1.1. Park extension activities should be guided by the Community Work Advisory Committee of the Joint Advisory Board, which should make specific written recommendations after each meeting.

C1.2. The new section head at Sumur should be given specific responsibility as extension work specialist for the Park.

Most of the communities interacting with the park are in the Sumur area. The location of the new section there represents an ideal opportunity to foster closer community relations.

C1.3. NGO activities should be encouraged to continue in parallel with Park extension activities, but under close collaboration. Park extension workers should be present at and participate fully in all NGO initiated community meetings and events

C1.4. Establish a local community forum to meet three times per year.

C1.5. Designate and, in conjunction with WWF and LATIN, train specialist community rangers in each section.

C2. To ensure that all community activities are linked clearly, positively and where possible contractually to Park objectives.

C2.1. Initiate a Park awareness raising programme in local communities, emphasising positive attributes and benefits of the Park

The campaign should include:

- Programme design workshop with NGOs, guided by the Community Programmes Advisory Committee.
- Production of posters and leaflets promoting the Park
- A series of community events

C2.2. Ensure that Park Extension team workers participate in and contribute to the delivery of the new park conservation curriculum delivered in local schools.

Extension workers should build links with a network of schools and become regular visitors.

C2.3. Work with WWF and LATIN to carry out a feasibility study on the establishment of village conservation contracts, using similar projects in Sumatra as a model.

A team should visit Sumatra to assess the programme there and produce a plan for a similar programme around Ujung Kulon.

C3 To establish community resource defence initiatives, particularly in the marine areas of the Park.

C3.1 Carry out a feasibility study for the establishment of marine community resource defence zones

This approach is based on the principle that local communities should be given responsible control of community fishing grounds, in return for adhering to an agreed code of practice. Communities would then be able to cooperate closely in the Park in protecting these areas from outside fishermen. Similar programmes have been established in the Philippines

C4. To develop means of monitoring and demonstrating the success of community related initiatives and to establish a regular monitoring programme.

C4.1 Establish sustainable utilisation demonstration areas in key locations

C4.2 Commission a research programme to develop and implement means for monitoring the effects of local communities on the forest and marine resources.

TOURISM RECOMMENDATIONS

Many recommendations concerning tourism development in TNUK have previously been made by Clarbrough (1993b,c,d, 1995), and it is not possible nor appropriate to evaluate all of them here. Tourism, however must not be allowed to develop at the expense of the wildlife which the park was intended to protect. Nor should the culture and economy of local communities be adversely affected.

From the point of view of park management, we feel that urgent attention is required to the following:-

T1 To define clearly the park management's authority over the Park.
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The extent to which park management (as opposed to the private sector or Tourism Authority) can steer the development of tourism in TNUK seems very unclear. For example, can the park set fixed quotas on the number of tourists permitted to enter or to evict/ prosecute troublesome tourists and guides? This needs to be addressed for several reasons, not the least of which is the fact that the Jagawana claim to feel demoralised by what they perceive to be their lack of authority over tourists and guides in "their" park.

T1.1 Exert tighter controls on tourism within the park boundary

Any number of visitors are permitted to enter the park on any given day, and the accepted size of tour groups is unlimited (one PT. Wanawisata Alam Hayati (WWAH) representative claimed that single trekking groups have numbered 2-300 people!).

In the absence of adequate research on how many people the park can support without harm to the wildlife, *conservative* estimates are urgently needed to determine (a) how many people to allow into the park at any one time, and (b) the maximum acceptable size of each group of trekkers.

It may also be well worth considering excluding visitors from key wildlife habitats for part or all of the year (e.g., avoid core rhino habitat or important bird nesting areas during the breeding season). TNUK is surely large and diverse enough to ensure that all tourists can have an enjoyable and rewarding visit even if they are not free to travel everywhere. (Most tourists interviewed said they would readily accept certain areas to be off-limits if it were for the good of the wildlife).

T1.3 Renegotiate the present arrangement between WWAH and PHPA/TNUK

Continued expansion of WWAH could seriously undermine the morale of park staff and perhaps damage the environment. It is highly advisable to prevent WWAH from building more guest houses in ecologically sensitive areas, and WWAH should take full responsibility for ensuring that its guests and staff understand and obey the park's regulations.

At the minimum a memorandum of understanding should be negotiated to include:

- Mutual recognition of the role and meaning of ecotourism.
- Acknowledgement by Wanawista of the authority of TNUK over the Park and clear maps showing the extent of Wanawisata's influence.
- Precise definitions of the areas of control of Wanawisata and of their rights and responsibilities in these areas.
- Detailed agreements on the maximum future expansion of Wanawisata expansion
- Acknowledgement by Wanawisata of their responsibility for the behaviour of their visitors.
- Agreement by Wanawisata to adhere to all Park regulations concerning visitor numbers and activities.

T2 To ensure that tourism impacts on TNUK remain within safe and acceptable limits

T2.1 As a matter of priority set conservative limits on the number of people permitted to enter TNUK each day, and on the maximum size of each group allowed.

The precautionary principle should apply to all nature tourism operations. Current good practice is based on setting and strictly imposing 'best guess' limits and then initiating the necessary research to clarify and if necessary adjust the limits.

The 'research first approach' has two main weaknesses:

- It is hard to attribute particular effects to one variable (e.g. visitor numbers). Counter arguments can always be constructed, suggesting another variable as the cause of the effect.

- The calculation of 'Ecological Carrying Capacity' for visitors is notoriously difficult to make.

T2.2 Study tourism impact on wildlife and habitats within TNUK before deciding whether to raise limit on numbers.

T2.3 Carry out a study of the impact of tourism on local communities.

T2.3 Prohibit entry by tourists into core rhino habitat and other particularly sensitive areas.

T2.4 Develop a "code of conduct" for park users, and ensure that it is available to everyone (Perhaps in leaflets and/or on signboards at the main foci of tourist activity).

T3 To improve the quality of the visitor experience through zoning and through improved information, education and interpretation.

At present, most tourists come to TNUK in the hope and even expectation of seeing a rhino. There has to date been little effort among either the private tourism operators or PHPA to highlight the many other wonderful attributes of the park. The Interpretation Centre at the HQ in Labuan does provide a good overview of the park's fascinating human and natural history, but not all visitors to the park actually go to see - or are even aware of - this display. The new Park Handbook is a very well produced document, but is not available in Tamanjaya.

T3.1 Improve visitor education

In addition to publicising the rhino, raise awareness of the other unique historical and natural features of the park (through well-informed guides, good-quality booklets and signboards, posters, etc.).

T3.2 Establish an interpretation zone in a typical, but non sensitive area of the Park.

If visitors are to gain maximum satisfaction from their visit *and* gain a greater understanding of the importance of conserving TNUK, then it is essential to make more information available, especially once they are in and around the park itself.

- An interpretation rich zone should be established enabling visitors to make one day hikes on clearly marked and maintained trails in typical but non

sensitive areas of the Park. These "tourist zones" should not impinge on key rhino habitat, but should certainly give the visitor the chance to see and learn about a wide range of wildlife.

- Enthusiastic, well-informed guides, good-quality booklets and attractive posters and signboards in various languages etc., should point out some of the many other species in this park and explain something of their biology.

T3.3 Define a wilderness zone for long distance trekkers

Only the most dedicated trekkers and nature lovers should be permitted to travel through more remote parts of the park, in the company of a qualified guide. This arrangement would raise the efficiency of educating the visitors, as well as ease pressure from the most ecologically sensitive parts of the park. Characteristics of the zone should be:

- Minimum interpretation
- Qualified and knowledgeable guides
- Clearly marked trails and designated camping areas

T3.4 Improve the quality of the guiding service and permit only trained, registered guides to lead tour groups into the park. Clearly define which Park staff are to be permitted to act as guides.

There is apparently no control over who can act as a guide in the park, and although every tour group is *supposed* to be supervised by a Jagawana, in practice not all tour groups actually are. Many visitors now employ self-employed, unqualified guides instead. This detracts from the quality of the visitor experience and does not ensure the safety and responsible behaviour of each tour group. The main reason that most visitors opt for independent guides is because the guiding service provided by Jagawana is more poorly organised and does little more than point out the route. At present, any of the Jagawana can guide groups, and most wish to do so for the extra income. Aside from the guide fee of up to 10,000 IRP per day, tourists sometimes give tips. Consequently, there is strong and rather unhealthy competition among the Jagawana to lead groups, and a tendency for them to hang around tourist areas in the hope of lucrative work.

- Only guides certified by the park management (perhaps identifiable with a badge or ID card) should be allowed into the park.
- Specialist interpretive rangers should be trained from among the Park staff. (See Recommendation IN.3.4)
- Non-PHPA guides should undergo some training and be certified by the park management (perhaps they could then be identified with a badge or ID card). They should be expected to know and obey all the park's regulations, cooperate fully with the PHPA staff and report all sightings of

illegal activities within the park. (See further recommendations on guide training and management by Clarbrough, 1993c).

- To help improve the park's relationships with local communities, guides from neighbouring villages should be given preference in a certification scheme.

T4 To raise park revenue from tourism

Tourism can be an important source of revenue for a national park, but TNUK gains little money at present. All tourists interviewed unanimously agreed that they would willingly pay more for the privilege of entering the park. One foreign visitor suggested US\$15 would be appropriate.

T4.1 A basic charge should be levied for all Park entries. This would allow access to the interpretation zone (see recommendation T3.2)

T4.2 An additional daily charge should be levied for trekkers in the Park. This should include the right to accompanied access to the wilderness zone and to camp at designated sites

T4.3 Foreign tourists could be charged more than domestic tourists in recognition of their broadly greater economic status.

T4.4 The increased revenue to PHPA should ideally be used to aid its activities within TNUK, perhaps through the establishment of a special foundation.

T5 Commission a full tourism management and ecotourism development Plan for the Park

A major cause for concern is that there is no overall tourism plan for TNUK,, in spite of widely predicted growth in tourist numbers in the future. At present, it is unclear how tourism will continue to develop in the park in the absence of a plan, but many stakeholders fear that the ever-growing number of visitors, their ill-controlled movements within the park, and the expansion of tourist facilities could have a serious impact on the park's wildlife, the work of park staff, and on local communities. Once tourism within the park has got out of hand, it will be extremely difficult to bring under control.

T5.1 Based on recommendations T1 to produce a detailed plan for the management of tourism in the Park

This task could be combined with the other duties of the operational management team.

T5.2 Produce a plan for the development of true ecotourism in the Park.

During his analyses of tourism in TNUK, Clarbrough (e.g., 1993d) commonly refers to what he regards as "ecotourism". However, the definition of ecotourism used by Clarbrough ("*tourism based principally upon natural and archaeological resources such as birds and other wildlife, scenic areas, reefs, caves, fossil sites, archaeological sites, wetlands, and areas of rare or endangered species*") is a definition of nature tourism, not ecotourism.

The Park should adopt and promote the more widely used definition, developed by the Ecotourism Society.

Ecotourism is:

'Responsible travel to natural areas which conserves the environment and improves the welfare of local people'

An evaluation of the potential for ecotourism by a reputable independent consultant is strongly urged. This should provide guidelines on how ecotourism can be managed sustainably in TNUK, in the long-term interests of conserving its wildlife and habitats. Special attention should be paid to how money from ecotourism can directly benefit TNUK and local communities.

RESEARCH RECOMMENDATIONS

R1 Establish a new Scientific Advisory Committee for TNUK (or expand existing Rhino Consortium), headed by Kepala TNUK, comprised of PHPA staff and scientists.

R1.1 The UKNP Advisory Board (see recommendation IN1.1) should act as a scientific advisory committee.

The Board should:

- Coordinate research activities (e.g., to prevent duplication of effort and to fill in the information gaps)
- Evaluate the findings and recommendations made by researchers, and help advise Kepala TNUK on the appropriate actions to take.
- Seek researchers and funds to undertake studies of special importance to the park and its management.
- Establish a research priority program

R2 Establish a research priority program

R2.1 The park management should have the dominant influence over research priorities in the Park.

At present, it is the visiting researchers who largely dictate what topics are studied in the park.

R2.2 Studies which could find answers to management problems should be favoured over research aimed solely at the advancement of science or personal scientific interests.

There are still many "unknowns" which are hindering the park management's ability to plan the park's conservation, education and tourism development. Studies which tackle these issues should be given precedence.

For example, applied research on the conservation biology of the rhino and other very rare species could be given priority over purely academic research on less pressing matters. A list of the priority areas of research should be widely distributed in journals, over the Internet etc., to encourage suitably skilled scientists to carry them out. (Note that it could be easier for visiting scientists to obtain funds for research which have been formally identified by the park as being High Priority).

R2.3 Identify priority research topics which will be of special value to the park and its management. These may include biological, geological, geomorphological, archaeological and socio-economic studies.

R2.4 Researchers who are willing to conduct the studies of special value to the park and its management should be given extra support and encouragement.

If underfunded, perhaps they could be permitted to stay at the park free of charge. When there is competition for room and resources at the park, scientists conducting the park's priority research should be accepted in preference to other scientists.

R3 Promote TNUK as a research venue.

R3.1 Encourage scientists to tackle priority research topics by releasing the list in journals and on the Internet.

R3.2 Promote TNUK as a research venue in Indonesia and abroad via journals/ Internet/ universities/ word-of-mouth, to stimulate a wider variety of studies within the park.

R3.3 Encourage researchers from a wide range of research backgrounds to undertake studies in the park.

While the emphasis could be on High Priority studies of applied conservation, recreational or cultural importance (see above), the value of pure academic research should not be dismissed. Studies of micro-organisms, for instance, may not appear to be of immediate applied value, but could further our understanding of the park's ecology as a whole.

Although special emphasis should continue to be laid on the Javan rhino, it is important to encourage studies on other fauna and flora. Most Jagawana feel their role is essentially to guard the rhino, and in discussions about their work they rarely acknowledge other rare wildlife in the reserve. Perhaps they would gain a greater sense of the importance of being the guardians of the park if more of its wildlife shared the limelight. After all, not all part of the park are actually inhabited by rhino, but they contain other species worthy of full protection by Jagawana

If funding is available, then it would be useful to provide special facilities for researchers, such as a reference collection and a basic laboratory near the park. (Note that the TNUK Five Year Work Plan, 1989-1994 intended the establishment of a research station on Pulau Peucang, in consultation with several Indonesian research institutes, but this has not been started).

R3.4 Establish a charging system for visiting researchers using TNUK.

- Each visiting research team could devote 5-10% research program funds to TNUK (at the discretion of the Kepala TNUK/ a scientific advisory panel - the fee could be waived in the case of underfunded studies of special importance to park management).
- The profits ideally should be retained and used for the benefit of the park; for example, to help fund High Priority research programs.
- NB If it is difficult for TNUK to retain the monies, then perhaps the researcher could donate equipment instead.

R4 Establish code of practice for visiting researchers

R4.1 The Park Advisory Board should support the Park in establishing a code of practice for visiting researchers, to be issued to researchers before they arrive at TNUK to start their studies.

The park management should clearly define what researchers are and are not permitted to do. For example, with regards to acceptable methods of data collection (should destructive sampling ever be allowed?); where the researcher is allowed to go; whether he must be accompanied by a Jagawana at all times.

R4.2 Researchers should present their findings to the park staff in a more readily accessible manner.

All too often, scientists will visit a national park, collect their data, and leave the park management with nothing more than a report. This report is usually in rather complex scientific language and is likely to be filed away out of the reach of ground-staff. However, if park staff have been directly involved in assisting the researchers, then they may appreciate seeing the results of their labours.

R5 Encourage closer involvement by PHPA staff with researchers.

From the point of view of the park staff, involvement in biological research can be a valuable learning experience and help them in their protection and public interpretation roles, while socio-economic studies could help the park staff to build up better relationships with the local communities.

R5.1 Visiting scientists work closely with Jagawana assigned to work with them.

- Scientists should consult with Park staff

From the point of view of the scientist, the park staff are a mine of useful information about the park, its wildlife and surrounding communities; as well as being able to help the scientist to gather new field data.

- Scientists should be encouraged to explain fully the methodology and purpose of their research to the staff who assist them.
- Visiting researchers should make a presentation of their findings to interested park staff.

·R5.2 Identify Jagawana with special aptitude for or interest in research, and give these priority for further training and for assisting visiting scientists. Reward these Jagawana according to their dedication and the quality of their work.

Jagawana often expected to assist researchers, but some scientists have been disappointed by the performance of certain members. Some data collected has been dismissed as being of such a low standard as to be completely unusable. To help the scientific community, it is advisable to identify which Jagawana show greatest interest and ability in assisting research.

- Jagawana who show the most dedication and thoroughness in research matters should be preferred for accompanying visiting scientists and be awarded appropriately through the credit-points system.

Although involvement by Jagawana in research should be broadly encouraged, it is important to ensure this does not compromise their other duties. Perhaps one solution would be to designate several Jagawana as Research Specialists, and enrol other Jagawana only for High Priority studies.

Ujung Kulon SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • High biodiversity • Refuge for many rare and endangered species • Extensive research information available • Strong Indonesian National Park planning structure • Substantial staff • Good equipment and infrastructure resources • Planned management structure • Extensive training received • Many experienced staff • Extensive advice available • International high profile of Javan Rhinoceros • 30 years of successful Rhino conservation • Terrestrial habitats in good condition • Strong interest and involvement of NGOs and donors • Proximity to Jakarta (ability to influence PHPA decision makers) 	<ul style="list-style-type: none"> • Insufficient evaluation of research data • Conflicting advice from scientific community • Lack of detailed operational management planning • Poor communications between Labuan and Tamanjaya • Lack of management at field level • Little management presence in the field • High administrative and reporting load • Slow response to field needs • Poorly maintained physical resources • Poorly understood roles and responsibilities among staff • Leakage of benefits of training • Weaknesses in personnel management and staff supervision • Underdeveloped links with local communities. • Poor coordination between key stakeholders • Marine habitats in poor condition • Little focus on conservation of other key species/habitats • Lack of Park control over tourism • 'Subsidy' of tourist activities
Opportunities	Threats
<ul style="list-style-type: none"> • Rhino population still has potential for recovery • Staff aware of many of the weaknesses • Great potential for benefits from true ecotourism • PHPA commitment to improving management • Strong interest from NGOs and International donors • Great potential for TNUK to be a model for integrated management. • Imminent changes in Park staff and organisational structure. • Connection of telephone and electricity supply to Tamanjaya 	<ul style="list-style-type: none"> • Rhino population not increasing • Continued encroachment, poaching etc. by local people • Increasing local population • Increase in illegal activities from further away • Increase in poaching due to poor enforcement • Staff collusion in illegal activities • Lack of Park authority over many aspects of management • Imminent changes in Park staff and organisational structure. • Continued loss of authority over tourism in the Park. • Declining staff morale and performance

Ujung Kulon PEST analysis

Political	Economic
<ul style="list-style-type: none">• Government commitment to biodiversity conservation• Strong centralisation of PHPA activities and decision making• Some tensions with Local Government	<ul style="list-style-type: none">• Current economic problems in Indonesia• Pressure for National Parks to increase revenue• Reliance of local communities on subsistence agriculture• High local unemployment• Little emphasis on sustainability locally
Social	Technological
<ul style="list-style-type: none">• Population growth• Poor access to education in some areas• Growing external influences on local cultural and religious values• Local perceptions of the purpose the conservation	<ul style="list-style-type: none">• Increased use of technological means for resource exploitation• Increased availability of technological support for Park activities• High costs of maintenance and replacement of technology

Ujung Kulon National Park Management Review Workshop
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