Pasture management workshop in Tusheti with local stakeholders (Hanns Kirchmeir)

Integrated Pasture Management Planning in Mountainous Regions (乔治亚)

描

The unsustainable use of pastures and forest areas has led to soil erosion, degradation, desertification and loss of biodiversity in the high mountain areas of the South Caucasus. The development of pasture passports is part of a broader approach to a strategic pasture management plan for Tusheti. This showcase includes results from the spatial planning process applied in a pilot programme for Akhmeta municipality.

Project area and purpose
The project area comprises the Tusheti Protected Areas (PAs) on the northern slopes of the Greater Caucasus Mountains in Georgia. This group of protected areas consists of a strict nature reserve, a national park and a protected landscape with about 40 villages and settlements. Together they form a total protected area of approx. 114,000 ha. In Tusheti, overgrazing has led, especially in the eastern part with a higher number of villages and roads, to soil erosion and biodiversity loss. Especially the intensive use of summer pastures during the Soviet period resulted in a severe deterioration of the mountain slopes. So far, there are no standards or guidelines for the elaboration of sustainable pasture management plans in Georgia. Pasture passports, as a first step towards sustainable pasture management, document the actual grazing capacity for each pasture unit and serve as a guiding document for shepherds and local stakeholders and as a basis to prepare lease contracts.
Data gathering
As a prerequisite for the development of pasture passports and the calculation of grazing capacity, the type of land cover, the erosion risk and the biomass of the pastureland had to be assessed for each pasture unit. This was done using remote sensing tools in combination with data collected in the field for calibration.
The details on the methodology of the Land Cover & Biomass as well as the Erosion Risk Assessment can be found in the WOCAT technology on "Remote Sensing as a Tool for Land Degradation Neutrality Monitoring" (see link).

Evaluation and Ground Truthing
All interim results have been checked and evaluated by local stakeholders, national experts and experts from local administrations. It was important not only to conduct workshops in seminar rooms but to meet the local stakeholders in the field and to discuss the problems and challenges of pasture management on place in the field. At this workshops all levels of decision makers were included (Ministries, Donor organisations, international and national experts, local administrations and land users). This was important to create a common understanding of the current situation from different perspectives (nature conservation, administration, shepherds ...). The combination of remote sensing with calibration data from the field can be summarised as a very effective method to assess the erosion state in large areas. Neither of the two instruments would be able to provide results in this spatial dimension and quality alone.

地

地点: Entire territory of Tusheti Protected Areas (1100 km²), Tusheti, 乔治亚

选定地点的地理参考

- 45.44145, 42.42855
- 45.34308, 42.33225
- 45.39539, 42.38602

启动日期: 2016

终止年份: 不

方法的类型

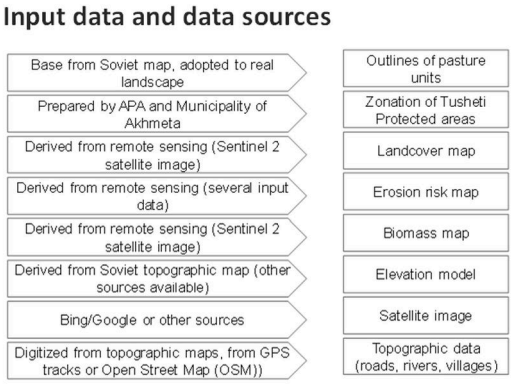
- [ ] 传 /本土
- [ ] 最 本地创新
- [x] 基于 方案

Pasture Passports
As part of the spatial planning of Akhmeta municipality, pastureland that can be leased to shepherds was separated from land used as hay meadows, farmland or pastures belonging to the villagers. The resulting map shows land available to the village and land available for lease. To understand the current use of pastureland, farms, livestock numbers and pasture units were assessed. In workshops with the local stakeholders and potential users of the results (shepherds, Tusheti Protected Landscape Administration, Tusheti NP Administration, APA), the design of the pasture passports was developed. Each pasture unit is described on four pages in the pasture passport.

Each pasture unit is described on four pages in the pasture passport: Header: the number (code), total area; content: map of the land cover types, the area of each land cover type, map of available biomass and carrying capacity, name of farmers/shepherds and their livestock numbers using the pasture unit

Spatial Planning Department and Construction Policy (within the Ministry of Regional Development and Infrastructure MRDI), and the Agency of Protected Areas APA (within the Ministry of Environmental Protection and Agriculture MEPA), are key stakeholders to use the pasture passports and to further develop and upscale this approach to other protected areas in Georgia. Beside APA, the Tusheti Protected Landscape Administration (TPLA), located within the Akhmeta municipality administration, is the second important user of pasture passports. The pasture passports are showing not only the boundaries of each pasture unit, but also those areas that must not be grazed because this lands are part of strict protected areas or areas of high erosion risk. This helps shepherds to guide their flocks to the right places and the park rangers to check, if the regulations are respected correctly.

Implementing new electic fencing technology as hands-on-training together with local stakeholders, Tusheti Protected Areas (Hanns Kirchmeir)



Overview on the data used for preparation of the passports (Hanns Kirchmeir)

方 标和有利 境

该方法的主要目的/目标
Support land use planning and decision-making processes for better management of natural resources, especially pastures.

推动实施本办法所应用技术的条件
- **社会/文化/宗教规范和价值观**: There is a strong identification of the local communities with the traditional pasture land use and the communities are willing to establish a long-term sustainable land management.
- **机构设置**: Good cooperation between the relevant institutions on the national and municipal level enabled a successful implementation. The Agency of Protected Areas (APA) located at the Ministry of Environmental Protection and Agriculture (MEPA) and the Tusheti Protected Landscape Administration (TPLA), located within the Akhmeta municipality administration are responsible for contracting lease agreements with shepherds and should not only be able to understand the technology behind the passports but should also have the capacity to handle the technology to be able to adapt the passports if needed (e.g., by changing boundaries of pasture units). For this issue, training workshops with decision-makers and technicians from the MoEPA, APA with TNP Administration and Administration of Akhmeta Munucuaplity with TPLA have been implemented. Collaboration/ coordination of actors: All relevant national and local authorities that are dealing with spatial or environmental data participated in the workshop to discuss the approach and institutional suitability to host the sensitivity modelSoil Erosion Risk Model.
- **参与者的的协作/协调**: All relevant national and local authorities that are dealing with spatial or environmental data participated in the workshop to discuss the approach and institutional suitability to host the Soil Erosion Risk Model.

阻碍实施本办法所应用技术的条件
- **财务资源和服务的可用性/可得性**: Missing financial resources is hindering the implementation of the approach.
- **了解SLM，获得技术支持**: There is a high need for technical infrastructure and strong human capacity development.

□ 关利□ □ 关□ □ 参与和□ □

该方法涉及的利益相关者及其职责

该方法涉及哪些利益相关者/执行机构？	指定利益相关者	说明利益相关者的角色
当地土地使□ 2当地□ 区	Shephards, local communities	Participation at the workshop/meeting and making contributions through comments, suggestions and sharing their analytical point of view.
SLM专家/农业□ □	GIS-LAB (Georgian scientific GIS service provider)	National experts on remote sensing and modelling of erosion risk.
□ □ 人员	National ecologists from universities	
NGO	Centre for Biodiversity Research & Conservation (NACRES); staff and experts from FATPA (Friends Association of Tusheti Protected Areas); local NGO's	Interviews with local stakeholders, field experts
地方政府	Municipality of Akhmeta and Tusheti Protected Landscape Management	Participation at the workshop where they have given input and made contributions to the topic of technical aspects of the approach.
国家政府□ □ 划□ 、决□ □ □	National Park management and APA (Agency for Protected Areas)	Long term aplication and upscaling on national level.
国□ □ □	Deutsche Gesellschaft fuer Zusammenarbeit (GIZ)	Funding and supervision of the implementation process.

当地土地使用者/当地社区参与该方法的不同阶段

	无□动	外□互动	支持□我动员
启动/动机		✓	
□ 划		✓	
实施			✓
□ 2□ 估		✓	

Organized meetings, workshop where stakeholders, local communities discussed different technical methodologies, visited the project communities and evaluated the preliminary result maps of erosion risk in the field.

流程图

The process of generating pasture passports consists of several phases. The needs and expected content of the pasture management plans was defined in the early stage of the project by the local stakeholders, national experts and involved administrations. The preparation of the pasture management plans was an iterative process between the remotsensing and field sampling results and feedback and input from local stakeholders.

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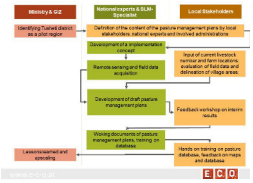

作□ Hanns Kirchmeir

有关SLM技术选择的决策

决□ 是□.....做出□

- ☐ 仅□ 土地使□ □ □ □ 主□
- ☐ 主□ 是土地使□ □ SLM专家提供支持
- ☐ 所有□ 关参与□ □ 作为参与式方□ □ 一□ 分
- ☑ 主□ 是M专家□ 咨□ 土地使□ □ 之后
- ☐ 仅□ SLM专家
- ☐ 政治家和□ □

决□ 是基于

- ☑ 对充分□ 录SLM□ □ □ □ □ 估□ 基于□ 据□ 决□ □
- ☐ □ □ □ 果
- ☐ 个人□ □ 和意□ □ 无□ 录□

技术支持、□ 力建□ 和□ □ □ □

以下活动或服务是该方法的一部分

- ☑ □ 力建2培□
- ☑ 咨□ 服务
- ☑ 机构强化□ □ □ 发展□
- ☑ □ □ 和□ 估
- ☑ □ □

能力建设/培训

向以下利益相关者提供培训

- ☐ 土地使□ □
- ☑ □ 场工作人员 □

培训形式

- ☐ 在□
- ☐ 农民对农民
- ☑ □ □ 区域
- ☐ 公开会□
- ☐ □ □
- ☑ workshop with field mission

涵盖的主题

Evaluation of model results, preliminary result maps of erosion risk in the field, technical implementation of the sensitivity model in Georgia.

咨询服务

已提供咨询服务

- [ ] 在土地使 土地上
- [x] 在固定中心

Located on district level in Telavi

机构强化

机构已强化/建立

- [ ] 否
- [ ] 是 少
- [x] 是 度
- [ ] 是 常

在下述层面上

- [x] 本地
- [x] 区域
- [x] 国家

描述机构、角色和职责、成员等.

The results of the approach implementation in Georgia has been summarized by the Programme "Integrated Biodiversity Management, South Caucasus" and distributed to the experts in Azerbaijan for the further implementation.
Approach and results have been handed over to the local municipality responsible for the lease contracts in the Protected Landscape and to APA, which is responsible for the land use in the national park to integrate them into their pasture management plans.

支持类型

- [x] 务
- [x] 力建/培
- [ ] 备
- [x] sharing the concept, approach

进一步细节

The concept and approach has been shared with local municipalities and other related experts.
Pilot study financed by GIZ.

监测和评估

Within the project a basline was drawn with the current livestock numbers, the current available fodder biomass and the current state of erosion.

研究

及以下主

- [ ] 会学
- [ ] /市场
- [ ] 态学
- [x] 技术

National and international ecologists did research on vegetation details and biomass as well as on the remote sensing technology.

和外 支持

SLM组成部分的年度预算，以美元计算

- [ ] < 2,000
- [ ] 2,000-10,000
- [x] 10,000-100,000
- [ ] 100,000-1,000,000
- [ ] > 1,000,000

Precise annual budget: 不

The funds came from the Integrated Erosion Control project which aas launched as part of the Integrated Biodiversity Management, South Caucasus (IBiS) Programme of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

已向土地使用者提供以下服务或激励

- [ ] 为土地使 提供/ 政 支援
- [ ] 定投入
- [ ] 信
- [x] 其它 励或手段

其它激励或手段

The Agency of Protected Areas (APA) thinks about upscaling the pasture passport method on a national level and establish the approach also in other protected areas of Georgia.

影响分析和 性

方法的影响

	否	是很少	是中	是支持力度很大
方 是否有助于当地土地使 提 利 关 参与度 Through the field visits and workshops, it has involved both experts and authorities, where they have assessed, analysed and given input.				✓
方 是否有助于基于 据 决 By the assessment of biomass, the carrying capacity of each pasture unit was calculated.				✓
方 是否提 了土地使 实施土地 和 力 The perception of the key stakeholders and management towards the importance of biodiversity and ecosystem services has become more positive.				✓
方 是否提 了其他利 关 和 力 The implementation capacity of line ministries, their subordinate bodies and of training institutions regarding the management of biodiversity and ecosystem services is improved at the national level.				✓
方 是否建加强了机构、利 关 之 合作			✓	

A cooperation between the local Administration of the Protected Landscape (managed by municipality) and the Administration of National Park (managed by national Agency of Protected Areas) was strengthened.

土地使用者实施SLM的主要动机

- [x] 增加 产
- [ ] 增加利 力 提 成本效 比
- [x] 减少土地 化
- [ ] 低 害
- [ ] 减少工作
- [ ] 支付/
- [ ] 制度 /执 款
- [ ] 声望、 会压办 会凝
- [ ] 加入 劝 /团体/
- [ ] 境意
- [ ] 习俗和信仰 德
- [ ] 提 SLM 和技
- [ ] 学改
- [ ] 冲

方法活动的可持续性

土地使 否 持 方 实施 措施 无外 支持

- [ ] 否
- [x] 是
- [ ] 不 定

The remote sensing technology is not available to the land users, but the results (pasture passports) can be used by shepherds and local authorities to adjust the grazing intensity to the maximum carrying capacity of each pasture unit.

和吸取 教

长处: 土地使用者的观点

- The pasture passports are describing each pasture unit available for lease not only by size but also by the amount of available fodder biomass. This is representing the productivity and the maps are showing the accessibility of the fodder biomass to the livestock. This is essential for a more accurate prize estimation on the value of each pasture compared to old data just giving the size of the pasture unit.
- The pasture passports are improving the legal basis for the lease contract. Areas that should not be grazed (strict protected areas, forests, areas of high erosion risk) are clearly shown on the map.
- During the preparation process the village related areas and the pastures for lease have been defined and mapped. This leads to clear responsibilities for the different pasture lands.

长处: 编制者或其他关键资源人员的观点

- Contribution to the work by local municipalities - the overall results have been handed over to the municipality, responsible for the lease contracts in the Protected Landscape and to APA, responsible for the land use in the National Park.
- The remote sensing technology is an objective method to assess the state of the pasture land and can be reproduced at any future time or in other areas of the Caucasus.
- The GIS data and databases can support the administrative process of preparing lease contracts and can additionally be used for further research activities.

弱点/缺点/风险: 土地使用者的观点如何克服

- Informal land use practises are now documented and fixed in lease contracts. That might lead to higher costs (lease) and reduce the profit of the shepherd/livestock owner. It needs to be communicated that long term lease contracts guarantee the shepherds/livestock owner grazing rights for several years. Investments into pasture quality and infrastructure become more meaningful.

弱点/缺点/风险: 编制者或其他关键资源人员的观点如何克服

- The preparation process includes high investment of resources in the first setup of the remote sensing data, field evaluation and database development. It needs special experts and know how. Remote sensing becomes cheaper when applied on large areas. A distribution of field samples across the whole Caucasus range would enable to upscale from the pilot area to a much wider range with less costs per hectare pasture land.

参 文

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WOCAT数据库中的完整描述
https://qcat.wocat.net/zh/wocat/approaches/view/approaches_5490/

链接的SLM数据
Technologies: Remote Sensing as a Tool for Land Degradation Neutrality Monitoring
https://qcat.wocat.net/zh/wocat/technologies/view/technologies_5488/
Technologies: Permanent grass cover in vineyards https://qcat.wocat.net/zh/wocat/technologies/view/technologies_6194/

文件编制者

机构
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- Integrated Biodiversity Management, South Caucasus (IBiS)

主要参考文献

- Kirchmeir H. 12/2018: Implementation of an Erosion Risk Assessment tool on pilot regions in the Southern Caucasus. The Programme „Integrated Biodiversity Management, South Caucasus":

链接到网络上可用的相关信息
- The European GeoNode system: http://pegasosdi.uab.es/geoportal/
- Monitoring Manual for Highland Pastures in the Caucasus: https://biodivers-southcaucasus.org/uploads/files/Monitoring%20Manual%20Draft%20ENG_new%20%20amendments%20for%20Georgia_v9_acc.amend.pdf