黄山旅游可持续发展

2012 年监测报告

黄山风景区管理委员会

联合国世界旅游组织旅游可持续发展观测点管理与监测中心

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目 录

1 前言

1.1 监测介绍

世界级风景名胜区黄山是中国山岳型旅游目的地的杰出代表。作为集中国首批十大风景名胜、中国 5A 级旅游景区、全国文明风景旅游区、世界文化与自然遗产、世界地质公园等多项国际国内桂冠于一体的旅游目的地，黄山的可持续旅游发展受到中国乃至全世界的瞩目。2008 年 2 月 26 日，世界旅游组织和联合国教科文组织正式设立世界旅游组织旅游目的地可持续发展黄山观测点和世界遗产地可持续旅游发展（黄山）观测区。目的在于通过对黄山生物多样性、地质资源的脆弱性等生态环境指标的长期监测，收集黄山旅游业可持续发展的多种指标数据，进而探求世界遗产地旅游经济最大化、负面环境影响最小化的发展模式。

2011 年 8 月 22 日，联合国世界旅游组织旅游可持续发展观测点管理与监测中心正式启动为期五年的黄山旅游可持续发展监测与管理工作。在黄山风景区管委会的大力支持和积极配合下，中山大学先后于 2012 年 3 月、5 月、9 月派监测组前往黄山进行实地调研。希望通过全面调查黄山旅游发展产生的环境、社会及经济影响，总结其可持续旅游发展管理经验并在全球推广。

1.2 监测方法

1.2.1 监测过程

本期监测范围为黄山风景名胜区总体规划范围（2006 年），并将缓冲区作为部分评价内容。具体包含列入黄山风景名胜区的 160.6 平方千米，及其周边的五镇一场（黄山区汤口镇、谭家桥镇、三口镇、耿城镇、焦村镇和洋湖林场，行政总面积约为 490 平方公里）。

在对第一期监测成果进行梳理总结的基础上，本期调研做出补充和调整如下：

2012 年 3 月 8 日至 14 日，由中山大学旅游发展与规划研究中心（以下简称中心）的 1 名教授、监测中心的 1 名项目协调员、1 名博士生、9 名硕士生组成的监测小组，通过问卷、

实地观察和访谈的形式，完成了对 1）景区游客满意度；2）景区游客环境行为（需要后期进一步收集资料）；3）景区（山上）员工满意度；4）缓冲区（五镇一场）与黄山景区毗邻的 16 个行政村居民对黄山旅游满意度；5）黄山旅游经济漏损相关问题的调研。收回有效游客问卷 176 份；员工问卷 196 份；社区问卷 279 份（汤口镇 132 份，其余四镇 147 份）；对景区酒店主要管理人员、员工，缓冲区村镇主要负责人、村民，景区物资采购部门、人力资源部门一一进行了访谈，并收集了相关的二手资料。

5 月 5 日至 8 日，由中心的 1 名项目协调员、5 名硕士、黄山管委会的一名工作人员共同完成了黄山游客满意度和经济漏损问题的补充调研。共收回有效游客问卷 388 份，并对屯溪老街 265 家店铺进行了抽样调研（47 家）。

9 月 6 日至 9 月 13 日，由中心的 1 名教授、1 名博士生、2 名硕士生、4 名本科生组成的监测队第三次奔赴黄山，细化了前两次的游客和居民问卷，对黄山游客满意度、解说系统有效性、缓冲区居民态度进行了更大样本的调研。收回有效游客问卷 406 份，社区问卷 329 份。

1.2.2 主要问题与指标筛选

结合世界旅游组织（WTO）指标方法、《黄山风景区旅游总体规划》以及黄山风景区旅游发展实际情况，在第一期监测经验的基础上，制定了本期黄山风景区旅游可持续发展的基本指标，具体见表 1 所示。

表 1　黄山风景区旅游可持续发展监测主要问题和基本指标汇总

	主要问题	监测的基本指标	是否已有常规监测	建议本项目监测频率
旅游与资源、环境保护	生物多样性保护	1. 国家重点物种数量	是	5 年
		2. 濒危物种种类；数量。	否	5 年
		3. 古树名木数量；分布状况；保护等级。	是	5 年
		4. 森林覆盖率	是	5 年
		5. 资源保护方面的科研合作项目名称；任务；合作机构；历时时间	否	1 年
		6. 新增保护措施	否	2 年
	文化资源保护	7. 摩崖石刻和文物古迹的数量、保护状况	是	5 年
		8. 用于文物保护（恢复、保护和维持）的资金和比例	否	1 年
		9. 新增政策与保护措施	否	5 年
	游客分流情况	10. 各大门的进山游客比例	是	1 年
	水环境	11. 地表水水质达标情况	是	1 年
		12. 饮用水水质达标情况	是	1 年
		13. 生活污水处理每年总量;与旺季日处理量峰值	是	1 年
	声环境	14. 生活和交通噪声达标情况	是	1 年
	大气环境	15. 空气质量达标情况	是	1 年
	固体废弃物	16. 固体废弃物年产总量	是	1 年
		17. 处理废弃物的方式	是	5 年
		18. 循环再用的废弃物总量所占比例	是	1 年
	主要景观美誉度	19. 主要景观的美誉度	否	3 年
	保护区	20. 保护区内的建设面积、集中度	是	3 年

	主要 问题	监测的 基本指标	是否已有 常规监测	建议本项目 监测频率
	建设面积			
旅游与社区	**旅游发展水平**	1. 社区人口总数（本地外地构成）	是	3 年
		2. 景点数量	是	1 年
		3. 住宿设施数量	是	1 年
		4. 接待到访的游客数量	是	1 年
		5. 旅游对当地社区的总体影响	否	2 年
	居民态度和影响感知	6. 居民对旅游发展的总体态度（问卷）	否	1 年
		7. 对于旅游带来的经济、社区以及文化影响的居民感知	否	1 年
	社区参与程度与意识	8. 社区居民从事旅游相关工作的比例（数量）与主要类型	否	1 年
		9. 社区居民对其旅游参与程度的感知	否	1 年
		10. 社区居民对“旅游可持续发展”概念的感知度	否	1 年
		11. 社区居民所关注的旅游发展相关问题	否	1 年
	商业伙伴的满意度	12. 导游及旅行社的满意度	否	2 年
游客感知与满	**游客满意度水平**	1. 游客对黄山资源、服务、整体旅游环境及其他方面的满意度水平	否	1 年
		2. 游客总体满意度	否	1 年
		3. 游客对于旅游体验是否符合预期的感知	否	1 年
		4. 游客的重游率与推荐意愿	否	1 年
		5. 黄山风景区游客投诉率	是	1 年

	主要 问题	监测的 基本指标	是否已有 常规监测	建议本项目 监测频率
意度	游客安全	6. 游客事故发生率	是	1 年
		7. 游客对黄山旅游的安全感知	否	1 年
	游客教育	8. 参加黄山风景名胜区开展的解说教育活动的游客占总数的比例	否	1 年
旅游的经济影响	旅游收入	1. 黄山风景区接待游客总人数	是	1 年
		2. 旅游统计数据（旅游总收入、床位数、过夜人数，人均花费等）	是	1 年
		3. 周边低山景点的接待游客人数	是	1 年
		4. 周边低山景点的旅游统计数据	是	1 年
	旅游季节性程度	5. 景区旺月与淡月游客数量的比率；	否	1 年
	旅游与就业	6. 旅游创造的就业机会；	否	1 年
		7. 旅游从业人员的满意度	否	2 年
	旅游的经济带动作用	（专项研究）	否	3 年
组织与管理	组织管理上的成绩和社会认可度	在业界和社会上的认可度	否	3 年

报告主体内容包括旅游与资源、环境保护，旅游与社区，游客感知与满意度，旅游的经济影响及结论与建议六个部分。

2 旅游与资源、环境保护

2.1 资源保护评估

2.1.1 生物多样性保护评估

黄山风景区一直以来都非常重视生物多样性保护工作，本轮调查显示，目前黄山风景区总体上生物多样性保护状况，相对于周围区域，相对于其他一般的风景名胜区，是非常好的。其具体措施包括：

（1）生态环境保护方面，长期执行严格的景点封闭轮休制度，并于 2010 年 9 月将封闭轮休规范系列标准化（包括封闭轮休基本要求、封闭期管理和开放期管理三个部分的标准）。封闭轮休制度是对黄山风景区高海拔（1350m 以上）的核心景点实行轮流封闭，通过人工辅助恢复和自然恢复相结合的措施，使植被修复升级，恢复景点良好的生态环境。同时进行生态监测与评估，视其恢复情况，适时对外开放。

（2）古树名木方面，2009 年完成景区第五次重点古树名木调查。通过确定黄山风景区内所有古树名木的基础资料、具体地点、海拔高度、保护级别、树龄等资料建立古树名木名录档案。对重点古树名木实施“一树一策”的保护与管理制度，针对每一棵古树名木都建立起了长期监测、专家咨询、守护和应急等保护管理体系。

（3）科研合作方面，黄山风景区园林局近几年来持续与一些科研单位和高校合作，开展生物多样性调查、古树名木保护、生态维护方面的项目研究工作，本次调查将其近几年的主要研究课题进展情况汇总如下表 3：

2.1.2 文化资源评估

（1）保护机构设置方面，黄山管委会具体细化了各部分的文物保护和管理工作：政治处文化发展中心设置了文物管理所、博物馆，为全山文物保护职能机构，负责景区文物保护管理，负责各历史时期文物、史料收集，负责世界遗产、遗迹的陈列工作；规划土地局设置

遗产办，负责全山世界遗产的管理。

（2）政策支持方面，除国家层面及安徽省层面的各种文物保护与管理规定外，2006 年 9 月 21 日，黄山风景区专门制定了景区层面的《黄山风景区文物保护暂行规定》以指导和约束黄山风景区内部的文物保护工作。

（3）文物认定方面，黄山风景区目前共有 4 处省级重点文物保护单位（慈光阁、观瀑楼及听涛居、黄山摩崖石刻群、黄山古观景亭）；有 2 处正积极申请国家级重点文物保护单位认定。

（4）长期监测方面，除全国性文物普查登记外，黄山风景区会实施了景区范围的文物普查工作，并长期辅以人工监测。目前，已对普查的 668 个自然景观和 331 个文化景观建立清单。结合整个黄山风景区的信息化系统建设工作，在文物保护方面，电子普查数据库正在建设和完善过程中。

（5）文物保护与修缮方面，目前，黄山风景区近年文物保护与修缮费用汇总如表 3：

表 4　黄山风景区文物保护与修缮费用

	2003	2004	2005	2006	2007	2008	2009	2010	2011
慈光阁	3 万	10 万	73 万	/	125 万	37 万	/	52 万	200 万
观瀑楼	/	5 万	/	70 万	/	/	/	/	/
灵锡泉	6 万	/	/	/	/	/	/	/	/
松谷庵	30 万	/	/	/	/	/	/	/	45 万
钓桥庵	/	21 万		/	/	/	/	/	/
半山寺	/	/	/	/	/	70 万	/	/	/
其它	/	/	/	20 万		150 万	32 万	80 万	755 万
合计	39 万	36 万	73 万	90 万	125 万	257 万	32 万	132 万	1000 万

文物保护与修缮费用总计：1784 万元。

用于文物保护（恢复、保护和维修）的年资金 1000 万元。

资料来源：管委会政治处文物管理所

（6）重要文化景观“复原”方面，始终坚持“保护为主、抢救第一、合理利用、加强管理”的文物工作方针，加大专项资金与文保科技投入，积极开展文物保护与文化景观“复原”工作，取得了突出成绩。自上世纪九十年代以来，实施完成的文保项目工程主要有：

1991 年，实施完成毗卢殿古建筑落架修缮工程。

1995 年 11 月，实施完成观瀑楼整体修缮和环境整治工程。

1999 年，实施完成毗卢殿古建筑屋面、木构整体修缮工程。

2003 年 5 月，实施完成松谷庵古建筑落架修缮及周边环境整治工程。

2003 年 7 月，实施完成灵锡泉发掘修复工程。

2003 年 8 月，实施完成慈光阁名人书法碑廊保护加固工程。

2004 年 12 月，实施完成钓桥庵古建筑落架修缮及周边环境整治工程。

2004 年 10 月，实施完成观瀑楼油漆出新与屋面维修工程。

2005 年 10 月，实施完成慈光阁山门、普门塔、千僧灶、法眼泉古迹抢救修复及周边环境整治工程。

2007 年 8 月，实施完成慈光阁古建筑群防雷设施完善工程。

2007 年 10 月，实施完成半山寺古建筑修缮及防雷工程。

2008 年 5 月，实施完成黄山风景区博物馆标准化文物库房建设工程。

2009 年 9 月，实施完成慈光阁、黄山古观景亭、黄山摩崖石刻、观瀑楼与听涛居等四处省保立牌保护工程。

2010 年 11 月，实施完成慈光阁古建筑屋面维修工程。

2011 年 12 月，实施完成慈光阁放生池维修工程。

2012 年 4 月，实施完成檗庵大师塔维修工程。

2.2 环境保护评估

2.2.1 水环境评估

2.2.1.1 地表水水质

黄山风景名胜区为国家级风景名胜区，按照《地表水环境质量标准》（GB3838—2002）中水域功能划分标准和黄环字〔1993〕第38号文件关于黄山市水域功能划分办法，黄山风景名胜区地表水资源执行国家Ⅱ类标准。目前景区的监测单位将景区的地表水资源分溪水、泉水和水库水三种类型监测。

溪水水质监测方面，黄山风景区设有四个监测点位：九龙瀑、黄山大门、松谷庵和焦村，监测项目有酸碱度、溶解氧、氨氮、高锰酸盐指数、和五日生化需氧量五类，按照监测项目对其水环境质量状况进行相应的时间序列分析。本期调研获得2011年3月、6月、8月、11月的地表水监测数据显示，黄山风景区地表水质量优良，均达到或好于《地表水环境质量标准》（GB3838-2002）中Ⅱ类水质要求，水质状况有了很大改善，且能够保持。其中：

1) 4个监测断面的酸碱度（pH值）均满足地面水环境质量标准规定要求。

2) 4个监测断面的溶解氧均能满足地面水质量一类标准要求。

3) 4个监测断面的生化需氧量均满足地面一类水体标准。

4) 4个监测断面的高锰酸盐指数浓度均小于一类水质标准。

5) 4个监测断面氨氮均低于国家二类水质量标准的检测限值。

泉水水质监测方面，景区有泉15处，根据2008年对其主要的4处泉眼（温泉水、鸣弦泉、松谷泉、法眼泉）的水质进行监测分析的结果，黄山风景区泉水水质较好。

在水库的监测方面，本次调研获得景区园林局环保办2011年和2012年前两个季度的监测公告显示，黄山风景区云谷水库、五里桥水库、天海水库和西海水库各水源水质均符合或好于地表水国家Ⅱ类标准。

2.2.1.2 饮用水质量

根据《安徽省环境保护条例》及《安徽省城镇饮用水水源环境保护条例》的规定，为做好景区饮用水水源安全保护和监测工作，景区自 2011 年第四季度起开展饮用水源水质委托监测（监测单位为黄山市环境监测站）并将结果予以公告。检测结果表明黄山风景区饮用水源水质达标率 100%。

2.2.1.3 污水处理

生活污水方面，景区从 1986 年起共建有 13 处污水处理站，分别为玉屏片、西海片（在建）、温泉片、半山寺、管委会大楼、急救中心、天海、北海片、狮林片、云谷新索道、云谷片、松谷片、芙蓉岭（在建）。设计日处理能力达 7000 吨以上，目前正在逐步对其污水站进行升级改造，现以完成 3 处（天海、温泉、玉屏），预实现自动化控制和 24 小时视频监控，其中玉屏和温泉两处站点的污水排放标准已经提升至 GB18917-2002《城镇污水处理厂排放标准》一级 A 标准。

2012 年景区污管站提供的数据显示，生活污水年处理总量达到 52.2 万吨，旺季（一般指“五•一”和“十•一”期间）处理量峰值为 2000 吨/日。另外，景区玉屏楼宾馆原建有中水利用设施，后在宾馆改建过程中（大约在 2008-2009 年）关闭了；2012 年，在温泉地段整体改造项目中，计划新建中水利用设施。

2.2.1.4 声环境评估

黄山风景区噪声主要来源于宾馆、饭店、商店、文化娱乐设施、居民生活和车辆运行所产生，分为生活噪声和交通噪声。

噪声控制方面，有两项措施能够促进风景区的噪声监测以及噪声控制工作的开展：1）2004 年 9 月黄山风景区成立了新国线旅游客运有限公司，禁止个体户和中巴车进入景区，交通噪声得到进一步的改善；2）黄山风景名胜区监测站已于 2005 年启动噪声监测工作。本期调研获得黄山风景区环保办委托黄山市环境监测站于 2006 年 6 月 20 日 4 个点的交通噪声和 11 个点的区域噪声的监测结果显示：“交通噪声测点全部达标，区域噪声测点云谷寺、玉

屏楼两测点超标，超标值分别为 3.5dB（A）和 0.9dB（A）。为景区游客大声喧哗所致。”

2.2.1.5 大气环境评估

黄山风景名胜区对环境空气质量监测始于 1988 年，早期全凭人工采样和手工分析，而且仅监测 TSP、NO2、SO2 三项指标。2004 年初景区开始建设空气自动连续监测系统，九月底全面建成。本次调查获得 2011 年的监测数据，近五年的数据参见下表 6：

表 6　黄山风景区主要空气污染物对照表　单位：mg/m3

监测时间	二氧化硫（SO_2）年均值	二氧化硫（SO_2）数据范围	二氧化氮(NO_2)年均值	二氧化氮(NO_2)数据范围	可吸入颗粒物(PM_{10})年均值	可吸入颗粒物(PM_{10})数据范围
2007	0.006	0.004-0.007	0.005	0.004-0.006	0.027	0.020-0.034
2008	0.009	0.005-0.011	0.010	0.005-0.011	0.028	0.019-0.033
监测时间	**二氧化硫（SO_2）年均值**	**二氧化硫（SO_2）数据范围**	**二氧化氮(NO_2)年均值**	**二氧化氮(NO_2)数据范围**	**可吸入颗粒物(PM_{10})年均值**	**可吸入颗粒物(PM_{10})数据范围**
2009	0.007	0.003-0.019	0.012	0.004-0.028	0.024	0.006-0.045
2010	0.007	0.003-0.025	0.014	0.008-0.018	0.029	0.012-0.045
2011	0.010	0.006-0.015	0.009	0.003-0.013	0.027	0.021-0.032

资料来源：园林局环保办生态环境监测站 （国家一级标准：SO_2 标准 0.05 mg/m^3、NO_2 标准 0.08 mg/m^3、PM_{10} 标准 0.05 mg/m^3）

对比 2007-2011 年的空气质量监测数据可以看出，2011 年，SO2 含量升高，未达到国家一级标准；而 NO2 和 PM10 的监测值都较往年有所下降，接近或优于国家一级标准。总体来说，黄山风景区空气质量保持较好，空气质量优。

2.2.1.6 固体废弃物处置

与城市相比，黄山风景区的固体废弃物年产出数量较小，且年产生量总体上呈平稳趋势，产生量的年际波动主要源自开发建设产生的建筑垃圾数量以及入山人数的变化。黄山固体废物主要分布在三个区域，一是游道附近，二是宾馆酒店等经营场所，三是职工生活区。

目前黄山风景区对固体废弃物进行严格的分类管理：危险固体废弃物根据其类型不同（医疗废物、废弃的变压器、废试剂、废墨盒、废电池等）分别由环卫部门和相关部门按照严格的危险废物管理制度专门收集、运转和存放。一般固体废弃物分建筑垃圾和生活垃圾，对建筑垃圾严格执行申报、监督与验收制度，对生活垃圾的处置也采取了一系列的措施，包括减量化、资源化（回收利用）以及无害化（完善处理系统）。其中较为突出的几方面措施包括：

（1）建立采购配送中心，实现净菜上山，尤其是蔬菜类、禽类和水产类均经过除杂、加工、洗净后方可运输上山，减少垃圾产出；

（2）全面实行垃圾袋装化（袋装率达 100%），减少二次污染；并加强垃圾分类制度，从源头到过程都积极推进垃圾分类工作。

（3）日常清洁依靠人工作业，旅游高峰期利用索道清运垃圾；

完成环卫专项规划，以全面推进“山上垃圾山外处置”系统工程。

根据 2008-2010 年统计数据，景区固体废弃物主要为生活垃圾，年产量约为 4000 吨；处理方式主要包括焚烧、生物处理、填埋、废品回收和有机垃圾回收利用。在管委会发布的黄山风景区 2010——2011 年度综合治理工作方案中，提出出台《黄山风景区固体废物管理办法》，以加强对建筑垃圾等固体废物的管理。本监测建议专门对旅游活动产生的固体废弃物作独立统计。

3 旅游与社区

3.2 缓冲区发展水平

3.2.1 基本信息

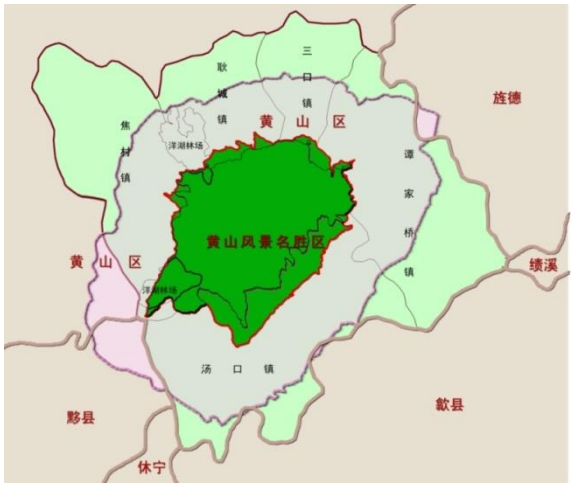


图 1 黄山风景区及其毗邻镇区图[1]

根据黄山风景名胜区规划（2007-2025），黄山风景名胜区占地 160.6 平方公里。缓冲区范围包括与之相邻的五镇一场，即黄山风景区汤口镇、谭家桥镇、三口镇、耿城镇、焦村镇和洋湖林场。（见图 1）

洋湖公益林场坐落在黄山风景区西、北两侧，环黄山景区接壤线达 16 公里。周边与耿城、甘棠、焦村、汤口、龙门五乡镇毗邻，外与黟县交界。林场下设洋湖、陈村、兴岭、雾山四个管护区，代管一个木竹园村民组，现经营总面积 3.5 万亩（同属黄山风景区 127 平方公里内的山场有 1.2 万亩），其中国家公益林面积 2.6 万亩，林场范围内总人口 132 人。从洋湖林场 2011 年度保护黄山工作汇报来看，林场的主要职责是：森林防火、资源保护、防虫防病、周边稳定工作等[2]。

[1] 来源：黄山风景名胜区总体规划 2007-2025

[2] 详见洋湖林场 2011 年度保护黄山工作汇报。

表 8 五镇人口、地域基本信息汇总

镇 名	常住人口（人）		面积（km^2）	区域大小		毗邻黄山（共 16 个行政村）	政府驻地
	本地	外地		行政村	村民组		
汤口镇（南）	15755	4733	129.35	5	74	山岔、汤口、寨西、芳村、冈村	汤口村
谭家桥（东）	8000 余人		136	4	49	中墩、新洪村、长罗村	中墩村
三口镇（北）	10039		60	5	65	汪家桥村、巷联村	白果树村
耿城镇（北）	约 1 万		85.8	5	51	城澜村、辅村、沟村	金桥村
焦村镇（西）	16137		259	14	107	章村、陈村、汤刘村	陈村

根据调研收集资料整理。

表 8 显示了五个镇的人口、面积、区域规模、与黄山风景区相毗邻的行政村以及镇政府所在地这几项基本情况。可以看出，人口最多的是汤口镇，其所有行政村都与黄山毗邻，地处黄山南大门，与黄山的地域联系最为密切。地域面积最广的是焦村镇，其也是黄山区国土面积最大、农业人口最多的建制镇。

3.2.2 农业经济发展现状

表 9　五镇农业经济发展现状统计表（2011）

镇名	主要产业	农村人均年纯收入
汤口镇	农、林业（木、竹、茶等）、旅游业（80%）	10050
谭家桥镇	农、林业（木、竹、茶等）、打工、做卤菜生意	7898
三口镇	外出务工为主，种茶叶，养猪	7749
耿城镇	农、林业（木、竹、茶等）、在甘棠务工较多	——
焦村镇	农业（木、竹、茶、山珍）、家禽养殖业、务工（1/3 出省）较多	7672

数据来源：各镇 2011 年农村经济统计年报，调研组访谈收集

表 9 统计了黄山风景区周边五镇农业经济发展现状。从占镇区大部分人口的农村人口年人均收入这一项指标来看，黄山风景区缓冲区五镇的农村经济发展呈现出“南部突出、齐头并进”的良好形势。“南部突出”是指位于南部的汤口镇经济水平相对较高，“齐头并进”是指其他几个镇经济水平也较好，差距不大。

总体来说，黄山风景区缓冲区主要的农、林业产品都是水稻、蔬菜、木、竹、茶等。水田、旱地不多，水稻和蔬菜基本上自己自足。村民将主要精力放在种植茶叶、砍伐山场的毛竹等树木以及培育山珍上。各镇有一些规模不一的茶厂，有的形成了自身品牌，如芳村的谢一元茶厂、谭家桥东黄山的六百里猴魁、耿城镇的松谷牌黄山毛峰等。这些品牌多有自身的茶叶种植基地，建立了较为统一的种植、采摘、炒制、包装标准，有固定的销售市场。有的小型茶厂统一收购附近本地茶农的茶叶进入工厂统一炒制。大多数茶农独门独户自家种植，采摘下来的新鲜茶叶被茶厂、商贩收购后，多余的会由自家锅炉炒制，然后运往位于黄山区政府驻地的甘棠镇茶叶交易市场出售给商贩。

各镇在农业经济上各有自身的亮点：

汤口镇主要农林产品为毛竹和茶叶，主要农副产品为竹笋、油茶、还有少量花生、土豆等。林场经济现是以管护为主，农产品主要是竹笋还有茶叶。镇域内山场面积广阔，林业用

地 17.53 万亩，占镇域面积的 94%，是省“毛竹之乡”之一。全镇有竹园 3 万多亩，活竹蓄积量 660 万根,年产毛竹 50 万根；这里也是历史上中国十大名茶－－“黄山毛峰”的主产地之一，全镇共有茶园 8061 亩，平均海拔均在 500 米以上，茶叶品质优良，年产干茶可达 100 多吨。

谭家桥镇各村间人均占地面积不均，有的村如聂家山人均十几亩地（应该是指山场），有的一人只有几分地。其境内新洪村是国家“东桑西移”工程的示点，在其村内随处可以看到桑树种植园（图 2）。目前的桑蚕养殖是与茶叶种植类似的小户经营模式。最北部的长罗村山场资源较多，村民多种植猴魁运往区茶叶交易市场销售，东黄山（上海）茶林场的六百里猴魁也在此收购达标的猴魁。

图 2. 谭家桥新洪村桑树园

三口镇汪家桥村村民的收入主要来源于茶叶、毛竹为主，水田很少。全村有耕地总面积 178 亩(其中：田 70 亩，地 108 亩)，人均耕地 1.15 亩，主要种植粮食、经济作物等作物；拥有林地 2855 亩，其中经济林果地 160 亩，人均经济林果地 1.03 亩，主要种植板栗等经济林果；水面面积 92 亩，其中养殖面积 92 亩；草地 1900 亩；荒山荒地 1975 亩，其他面积 2000 亩。老百姓自发开发成立了一个茶叶合作社，有 20 几家农户，由本村村民带头创建的，标准化经营 600 亩有机茶叶基地。该村还有一个经营了几十年的永乐养猪场，为老村支书家庭经营，请了本村村民做员工。旺季时村内销售，淡季外销。

巷联村主要是养殖业（肉猪）为主，种茶、种稻较少，自给自足。百分之七、八十的村民以打工为生。该村有个 500 多亩的树莓基地。由三口镇的老板和合肥的老板合伙的，合肥的老板占 70%。租的地，400 斤稻子每亩，签合同是农民签的，然后公司再和村委签一个总的合同。土地都是农民的，故租金全是农民的，村委是服务性质。租金每年都是按照当年的粮食的收购价格支付。树莓基地会请一些临时工人，是季节性的，能够解决四、五百人的工作。村委会对面正在建一个农机大院，面积占七八亩，是区农机大院征的，原来是田地，在村委前面。

耿城镇金桥村（镇政府所在地）以轻工业为主，农业经济不多。村民自主创业项目的代表就是鑫黄山食品厂，主要产品是土特产、笋、干香菇和山珍之类，销往南京、上海等地。城澜村的产业目前以农业为主，主要收入来源是村里的电站（电站使用村里的水力资源需缴纳一部分费用）和林场收入。村民主要种植作物是水稻、茶叶和毛竹，其中收获的水稻多是自给自足，采摘的茶叶一般送到黄山区茶叶市场出售或是客户直接上门提货。毛竹主要送到区里的加工厂进行再加工。村里有一家开展湖羊养殖的农户做得比较成功（图 3），产出的湖羊部分流入当地的餐饮业如虎林园的烧烤场，部分销往浙江。目前村里着力建设的农业项目是现代农业园，园中 500 亩的香榧基地已经建成，400 亩的果树种植园也正在建设中，建成后将种植黄金李、樱桃和葡萄三种水果，这部分由外商投资，不过会招聘村民种植打理。辅村的农业种植作物以水稻为主，辅以经果林，像葡萄、板栗、菊花和茶叶等，其中水稻种植面积约为 2800 多亩，亩产量 1000 斤左右。种粮大户的粮食以外销为主，销往粮食站及外面的粮食加工厂，一般农户则是自给自足。村里还成立了经果林合作社、养殖业合作社和茶叶合作社，主要在销售渠道和生产技术上给予村民指导，产出除了茶叶一般销往本地。沟村集体的收入主要来源于村里的林场。林场是 1964 年创办的，面积 3000 多亩，由村委会直接管理，由下辖村民组中富余的劳动力对林业进行抚育管理和综合开发。林场里主要种植毛竹和人工杉木林。整个村的毛竹面积达到了 6000-7000 亩，产出的毛竹基本上销售给城区园区的大型企业。村民不仅种植毛竹，也种植水稻。水稻种植面积达 1600 多亩，年产量每亩 800 斤左右，只产一季。村里有一家常年经营的蕨菜深加工企业和 2 家季节性的作坊，都属于私人经营，目前还没有村集体自办的企业。

图 3. 耿城镇城澜村湖羊养殖

焦村镇汤刘村拥有耕地面积 160.1 公顷,其中水田面积 141.8 公顷,旱地面积 13.5 公顷，有林山场面积 1813 公顷,农村经济主要来源于农业、林业、茶叶、灵芝、黑木耳、竹笋、垂盆草等中药材及劳务输出。章村年粮食产量在 157 万公斤左右（以水稻为主），是黄山区最大的产粮村之一。

小结：

从调研情况来看，各个村镇结合自身土地资源有侧重地发展了多项农、林产品。从供应链条上看，除了部分留作自给自足，大部分通过黄山区的交易市场流向整个黄山市境内以及周边省市。受市场经济利益导向，水稻、蔬菜的种植较少，茶、桑、竹、木占了本地的主要产品。

3.2.3 项目、景点发展情况

表 10 缓冲区低山旅游景点

镇名	近期招商引资项目	低山旅游景点	旅游就业
汤口镇	汤口新城项目、之江宾馆改造项目、黄山云海度假村改造项目等8个	翡翠谷、九龙瀑、凤凰源、香溪漂流（2008）、猴谷、新桃源、天湖（2009）、芳村大竹海	旅游景区经营、农家乐、景区景点打工、宾馆酒店等旅游产业服务员、汤口镇旅游服务公司及新国线工作
谭家桥	徽商集团、大东海、东黄山旅游度假区等80%集中在中墩村	石门峡、普仁滩漂流（2011年废止）、黄帝源（2011年废止）、东黄山旅游度假区（2007）、红军北上抗日先遣队纪念馆（2010）	景区、接待服务企业打工
三口镇	华绿园、昌荣选矿、碧水秀景、东茂药业、百草园、名山胜水等7个项目	夫子山旅游综合开发项目（龙裔公墓）、树莓加工观光项目、“碧水秀景”（在建）	较少，龙裔公墓景区内的工人
耿城镇	金桥科技工业园区：引进浙江兴乐铜业、安徽金鼎、天津厚海等16家 现代农业示范区	黄山虎林园（2009）、芙蓉谷景区（2007）、飞龙瀑景区（2011年废止） 地产：美瑞森林故事、后海风情园、茶博园、茶花园等	较少，景区服务、农家乐经营（集中在辅村）等
焦村镇	安华山庄、车友宿营俱乐部、佛文化主题公园	地轨缆车、翠微寺	较少，景区基建、服务员、导游等，季节性农家乐经营

从表 10 对近期招商引资项目的统计可以看出，五镇中发展最好的是南部的汤口镇和北

门的耿城镇。汤口镇得益于和黄山景区的密切联系，在房地产、大型度假酒店等项目开发上进展较快，低山景点经营情况也很乐观。耿城镇凭借与黄山区政府的地缘关系，发展较早，其境内主要是一些生态型工业项目，工业是其主要产业。其他三个镇谭家桥、三口镇、焦村镇由于地理位置劣势、发展起步晚等，引进项目资金较少，项目推进较慢。

表 11　2010-2011 年缓冲区景点接待游客（人）与旅游收入（万元）统计

年份	**2010**		**2011**		**同比增长**	
景点	接待人数	门票收入	接待人数	门票收入	接待人数	门票收入
翡翠谷	729963	2754.50	887396	3754.05	21.57%	36.29%
九龙瀑	347609	748.04	415616	1003.49	19.56%	34.15%
凤凰源	190624	152.72	215100	210.61	12.84%	37.9%
猴　源	27314	24.73	38358	33.31	40.43%	34.69%
芙蓉谷	508589	1170.10	637611	1634.62	25.37%	39.7%
石门峡	139485	198.20	218630	587.39	56.74%	196.36%
虎林园	50870	183.99	80201	400.35	57.66%	117.59%
香溪漂流	220095	——	265567	——	20.66%	——
东黄山	194146	——	217650	——	10.8%	——
天湖	——	——	86000	——	——	——
飞龙瀑	21501	16.51	536	——	——	——
年份	**2010**		**2011**		**同比增长**	
黄帝源	9084	9.07	1790	——	——	——
普仁滩	54753	81.25	23970	——	——	——

根据区旅委提供统计资料整理

表 11 反映了近两年缓冲区低山景点旅游接待人数和旅游收入情况。可以看出主要景点的旅游接待呈良好上升态势：门票收入增长率基本保持 35%的水平。特别是石门峡、虎林园的门票收入均实现了 100%以上的增长。说明通过市场促销、旅行社组团打包旅游等方式，黄山旅游较好地带动了周边社区低山景点的开发，实现了作为开发商的企业或村集体的效益。但同时，也有几个景点由于管理不善、资源独特性不强、市场被分流较大等原因失去了

竞争力，在 2011 年关闭或进行资产重组。

作为黄山风景区的“南大门”，独特的区位优势和丰富的资源优势，使**汤口镇经济 90%来自于旅游，劳动力 80%从事于旅游，财政收入 80%直接出自于旅游**。作为黄山旅游最主要的生活服务基地和旅游接待基地的汤口镇内拥有旅游社 18 家，宾馆酒店 130 余家，总接待房间超过 12000 间，其中星级宾馆 13 家，省级农家乐旅游接待示范点 1 处。围绕旅游接待的各类延伸产业快速发展，个体私营工商经营户接近 1200 户，旅游从业人员近 6000 人。

表 12　2011 年汤口镇接待游客数统计

区　域	总接待游客量（万人次）	同比增长
全镇	320	——
各景点	196.06	——
翡翠谷	90.9	22.69％
九龙瀑	42.09	20.08％
凤凰源	23.93	24.12%
猴源	3.82	38.41%
香溪漂流	26.54	——
天湖	8.6	——

数据来源：黄山区人民政府 http://zwgk.hsq.gov.cn/Read.aspx?id=31629

其中，各个村的旅游发展定位各有不同。汤口居作为游客进入黄山的南大门，加上 205 国道、103 省道还有京台高速都与汤口村的外围相连接，这为汤口居发展住宿业，餐饮业还有其他的特产销售等行业的发展提供了优越的条件，因此目前汤口居是黄山最主要的服务接待基地。各种酒店宾馆、土特产超市和商铺林立，极大地带动了当地的发展。山岔村作为汤口镇旅游资源最为丰富的行政村，从 87 年就开始依靠大黄山的旅游发展，目前总共建有五个景区，其中有两个国家 4A 级景区，分别是翡翠谷和九龙瀑，还有凤凰源、天湖景区、香溪漂流景区。据山岔村委会书记介绍，每个景区都由一个公司统一管理，每个公司又隶属于相关组，每个公司每年上缴纯利润的 2%给山岔村委会，山岔村委会用于村中的集体建设，特别是对一些不涉及到旅游景点的组的补贴和基础建设。山岔村五大景区 2011 年总的游客接待量是 110 万，占到黄山大景区游客的一半左右。旅游收入是 8765 万。芳村和冈村由于

地理位置问题，旅游仅仅是一个辐射作用，芳村在 205 国道边的村入口处，建设了芳村新村，提供酒店、农家乐餐饮住宿服务，在一定程度上缓解了旺季汤口居的游客压力，分流了一部分旺季游客；由于冈村新村尚未建设完成，旅游对冈村的辐射作用相对小，仅在 103 省道边建设有五六家农家乐。

综合对汤口镇的产业经济及就业结构分析，做出下图归纳：

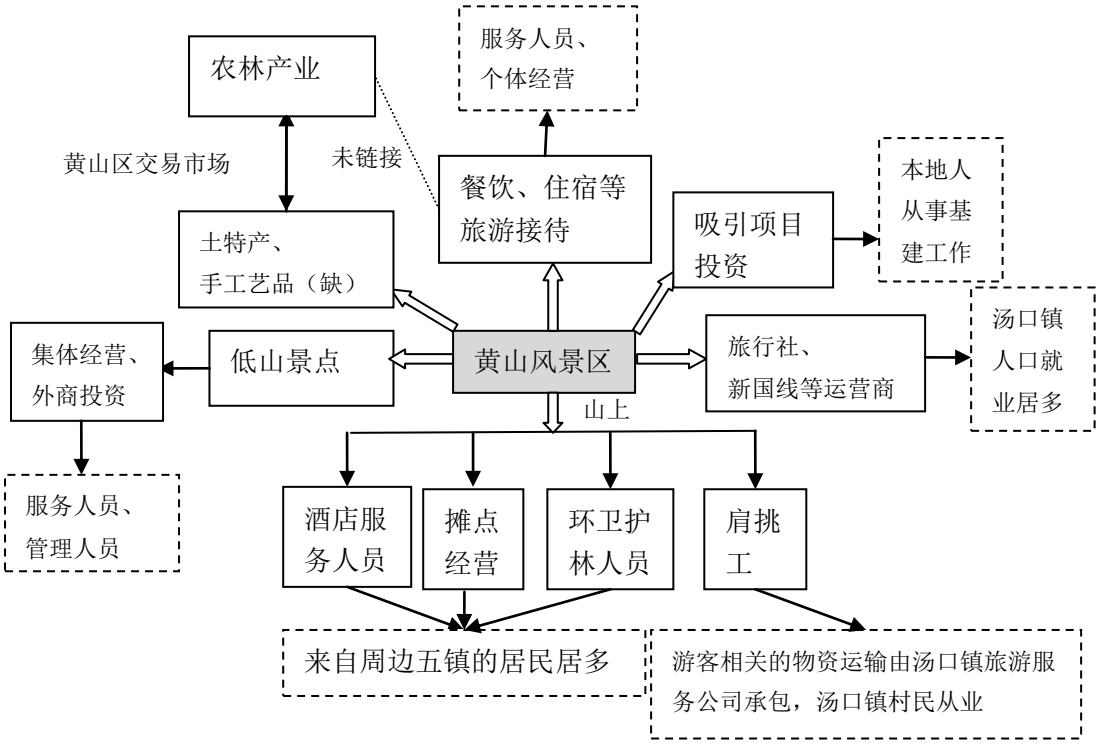


图 4　黄山风景区—汤口镇产业联系图

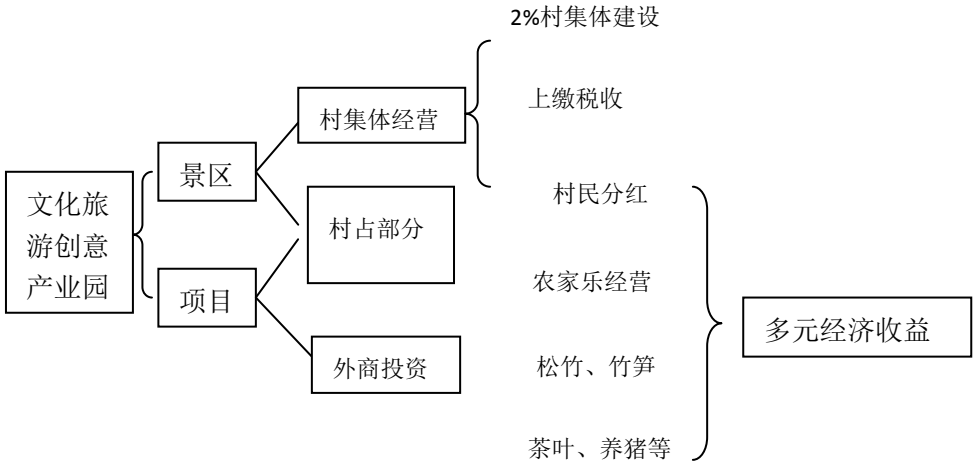


图 5.　汤口镇山岔村多元收益格局

谭家桥镇内 80%的项目集中在中墩村。受访的谭家桥镇副镇长介绍说，近几年镇上招商引资关于旅游的有徽商集团、大东海项目，达到十几个亿。现在这些项目基本上都签了合同。但是目前面临的主要问题是项目推进慢，投资商觉得市场没成熟，投入的资金和建设规模都不大，拿下地块后，推进慢。几个主要的旅游景区有石门峡、粟裕纪念馆、普仁滩漂流、黄帝源、东黄山旅游度假区。因为去年夏天黟县漂流出了事故，所以现在漂流查得较紧，普仁滩目前被重新收购调整规划。目前黄帝源在调整规划，02 年建的，现在就分块被 4、5 个小公司分别收购了。

三口镇新签了华绿园、昌荣选矿、碧水秀景、东茂药业、百草园、名山胜水等 7 个项目，协议资金达 5.6 亿元，其中华绿园项目已经开工建设，昌荣选矿项目即将建成投产。农业综合开发项目的格田成方任务基本完成，建成机耕路 14.2 公里、灌溉渠 13.9 公里，完成投资 1100 万元。夫子山旅游综合开发项目完成了一、二期洋田安置新村建设，正在编制安置新村三期规划。这些项目中真正开始的主要是在汪家桥村和巷联村。

汪家桥村最重要的一个旅游项目是夫子山旅游综合开发项目（即龙裔公墓）。占地 1000 多亩，它是一个人文纪念爱国者主义教育基地、殡葬改革示范基地、风景湖旅游基地，项目由安徽飞海置业投资，总投资额为 34000 万元，目前累计完成投资额为 16418 万元。目前墓区军魂园已扩建 50 亩，洋田新村第二期 14 户房屋正在建设。据汪家桥书记所说，“龙裔公墓与其他公墓不一样。这里主要是生态墓，草坪墓，艺术墓等等。里面是一个景区有亭子、走廊等，现在这里是从同一个大门进去的，里面有一些景点。这里是整个公司的子公司。由于中国人传统的封建思想，这样是不被接受的，要解决公墓和旅游之间的关系。所以规划是把公墓和景点的大门分开，一边是公募，一边是景点（湖等），步行街。

耿城镇的金桥科技工业园是全镇经济龙头，在 2009 年引进的浙江兴乐铜业、安徽金鼎、天津厚海、上海申懋、安徽科宇、浙江盛浩、安徽龙升等 16 家外地企业中，有 6 家落户园区。另一个重点项目是，饶村正在建设一个现代农业示范区，规模是 3 万亩，核心区有 6 千亩，是由省、市、区和县四级共同投资建设的项目。示范区内已建成的项目有黄山虎林园，后海风情园，竹木园。还有一个茶博园和一个茶花园，这两个项目是由上海的一家公司投资，主要用于茶园展示和高档花卉培育。旅游业方面，目前镇里已开发的景区包括黄山虎林园、芙蓉谷景区，飞龙瀑景区，这三个景区具体的游客接待量和旅游收入数据尚未拿到，故还不

能对其经营情况做出评价。还有一些旅游地产项目如美瑞森林故事、后海风情园等。

相比之下，**焦村镇**的开发要晚于耿城镇大概十年。项目进驻几乎为零。一个很大的制约条件是区位偏僻。2007 年以前，这里过境旅游车辆比较多，但由于省道路况比较差，弯道多，所以这类车辆逐渐减少。2008 年后宏图公路开通，一般游客选择从汤口走，分流掉一部分游客。目前，焦村镇主要游客类型为自驾游游客，他们不会做过多停留，大多选择去农家乐品尝当地的土家菜，有两三家比较有名的，很多游客慕名而来。这些自驾游游客借助导航仪导航来到黄山风景区西大门，由于上山后沿原路返回需 8 小时，很耗体力，大部分自驾游游客并不会从这里上山。

目前，山上山下开发西大门的共识已经形成。表现在：一方面，焦村镇这里的进山旅游公路属西大门最好，通往西海景区的步行栈道也在修复，由黄山风景区支付相关费用。另一方面，从北大门到西大门的道路（即从耿城镇城澜村到章村的道路）和从汤刘村到汤口冈村的隧道均在在筹划中。该镇通往西递宏村的道路改造也已经列入十二五规划中。

2012 年，有企业计划在镇上投资 2500 万建设一个安华山庄，另有其他投资者计划在当地投资建设宿营地和俱乐部等，这些旅游地产项目提升了当地旅游接待能力和吸引力。另外镇政府还致力于发展宗教旅游，计划开发一个以佛文化为主题的主题公园，提供佛像陈列、斋饭等综合服务，占地大概 300 亩。

小结：

总体看来，目前缓冲区的经济发展形势较好。汤口镇、耿城镇外出务工人口较少，说明本地就业机会丰富并满足了当地居民基本需求。项目投资某种程度上可以作为对几个相邻区域经济发展情况的比较标准。目前看来，旅游业对汤口镇的经济带动最大、带动面最广，对全镇产业经济起着不可替代的作用。其他几个镇的旅游接待业和景区经营成效不显著，这是没有参与到大黄山旅游产业中的表层表现。深层表现是，缓冲区（包括汤口镇）用于旅游接待、餐饮的原料（蔬菜、水果等）都并非产自本地。五镇的水稻、蔬菜等农产品只处于自给自足或者家门口销售，没有参与到整个大黄山旅游发展产业链条中。

3.3 缓冲区环境及能源利用现状

本次调研了解了五个镇的村容村貌、垃圾及污水处理、声音及空气污染、能源利用、森林保育等方面内容。

3.3.1 村容村貌

总体来说，五个镇的村容村貌都建设得卓有成效。修路、电网改造等工程使得村内道路整齐划一，在临近道路区域对居民建筑限制层高和进行风貌整治也在一定程度上规范了建筑风格，与山场、林地相伴，民居布局和结构紧凑、自由，屋宇相连，民居建设保留着传统徽派建设的特征，高低起伏，错落有致，黑白辉映，其间田陌纵横，呈现出一派皖南乡村景致。

3.3.2 环境保护

五镇各村内实行家禽圈养，村村实行安徽省农村清洁工程，每个村子内都定点摆放了垃圾收集箱，聘请专门的清洁人员定时清扫运到区里统一处理。

除了耿城镇金桥村（与甘棠镇统一建设），五镇目前基本没有建立起污水排放系统。因为境内没有工业污染，污水主要是当地居民的生活污水，都直接排到当地的河流里。由于长期无人管理，一些河流的污染情况也开始变得严重起来。如谭家桥镇的麻川河、汤口镇的逍遥溪等。

图 6　垃圾箱（摄于谭家桥）

图 7　汤口镇冈村垃圾池

另外，受访的五镇居民普遍表示生活的社区不存在空气、噪声污染。几乎所有居民都非常认同保护环境和野生动植物非常重要。

3.3.3 能源利用

五镇农村居民的饮用水基本上都是引自附近山上的山泉水。由村里统一接通水管，引水到户，按户用水量收取一定水费。也有部分地处偏僻、居住分散的村子还是直接打井喝地下水的。耿城镇镇政府所在地金桥村的居民饮用水是来自镇区浦溪河净化后的自来水。受访村民对饮用水水质普遍比较满意。但谭家桥中墩村居民也表示，夏季用水和用电都比较紧张。目前谭家桥镇正在修建水库。

镇内路灯工程中，谭家桥镇率先使用了生态环保的太阳能路灯，问及使用效果时，村民表示除雨天外，路灯的照明效果还是不错的。这是农村新能源利用的一个范例。居民家中主要使用三种能源：柴、液化气和沼气。政府在大力倡导沼气使用，但在一些外出务工者较多的村子，沼气的使用率不高。“因为沼气要经常性地清理更换，而目前村里的青壮劳动力基本都出去了，老人都习惯烧柴、石油液化气。”

3.3.4 森林保育

与黄山风景区毗邻的16个行政村（未合并前为20个）每年需要承担重要的防火护林任务。黄山风景区管委会与周边乡镇有联系的部门主要是管委会办公室、综合治理办公室以及防火办。根据访谈（防火办会提供相关资料），整理出缓冲区与黄山风景区毗邻的16个行政村每年对黄山风景区承担的职责与收益情况如下：

管委会每年会给每个村子（按照合并前的村域标准）2-3万元的资金补助，用于各村防火工作的开展如防火器材库的建立、防火人员的工资发放和其他日常管理。第二项扶持就是每年轮流各个镇安排一个项目，做一些基础设施、修路、环境卫生这些工作。根据管委会在周边村划出的几万亩公益林，按照大概10块钱一亩公益林的补偿费，一年就累计了十几万元给村镇轮流做项目。景区每年会定期前来验收。

2001年，黄山风景区周边划出了4公里隔离带，所涉及的村镇居民无偿砍伐了隔离带内所有的松木树种，为松材线虫病的预防做出了巨大牺牲。近几年，毗邻村还要承担防止驴友进山发生安全隐患的行为。

3.4 缓冲区居民态度和感知

此次监测对象为黄山风景区缓冲区内五镇居民，采取的调查方法以问卷发放为主，访谈为辅，重点关注对缓冲区所辖村中与黄山毗邻村的村民。3月、9月两次调研共发放有效社区问卷608份，其中汤口镇210份，焦村镇100份，耿城镇141份，三口镇41份，谭家桥镇116份。社区居民感知与态度的问卷内容涉及居民的地方感、居民的环境态度、居民的参与度、居民对黄山风景区旅游影响的感知和居民对发展旅游的支持度。在问卷设计上，采用李克特5级量表（five point Likert scale）设计模式，即对量表中每题给出5个备选答案，这五个答案按照同意度递增顺序排列，相应赋值为1、2、3、4、5。对问卷结果进行描述性统计分析。

3.4.1 居民总体态度

缓冲区居民中，平均有 94.60%的社区居民渴望发展旅游业，支持继续发展旅游业的社

区居民有 89.29%。数据表明，当地居民对旅游业持积极的态度，普遍希望并支持当地发展旅游业，增加就业机会，提供更多创造收入的门路。

3.4.2 对于旅游带来的经济、社区及文化影响的居民感知

经济方面，五镇中平均 73.92%的社区居民认为经济发展水平有所提高，67.60%的社区居民认为就业机会增加、77.09%的社区居民认为发展旅游使当地物价水平上涨，62.35%的社区居民认为贫富差距拉大了。数据表明，四个乡镇经济水平均提高了，给当地居民带来的就业机会也有所增加。与此同时，物价水平有所上涨，贫富差距有一定拉大。

社会方面，75.39%社区居民认为本地的道路、水电等设施改善了，经调研得知，五镇均在进行道路硬化及升级建设。72.56%的社区居民认为本地的医疗条件改善了，这个数字实际体现地是村民对于国家医保制度的态度。68.59%的居民认为本地的教育水平提高了，就学校分布来看，小学能基本实现在本村附近就读，但初高中一般都离家较远，上学不太方便，有条件的家庭举家搬迁，或陪读。76.07%的居民认为老房子不断拆迁，新房子不断增加，这很大程度上得益于新农村建设项目。总的来说，社会方面村民最认同的是旧房拆迁，新房增加。教育水平的认同度最低。

文化方面，63.47%的村民认为本地和外地的文化交流增多了，32.94%的村民认为本地的民俗和传统文化被破坏和淡忘，43.71%的村民认为本地节庆活动增多。由数据可见，有村民反映外来人不多，所以交流机会少，对于经常接待游客的汤口镇，村民反映虽然有游客来此，但都是来去匆匆，很少他们有文化交流。至于节庆活动，村民多理解为休闲娱乐活动，认为休闲方式比较单一。

环境方面，71.39%的村民认为村里的环境卫生条件改善了，21.44%的村民认为本地的空气污染加重了，26.09%本地的噪声污染加重了，52.45%本地水体（河、湖、水库）受到了污染，44.88%村民认为本地固体垃圾增多了。9 月调研又得到 72.4%的村民认为风景区周边动植物资源得到了保护，72.3%的村民认为本地人环境保护意识增强，66.8%的村民认为政府加大了对当地环境的保护，41.1%的村民认为农田景观遭到破坏，32.2%的受访者认为本地环境质量不断下降，30.1%的村民认为未开发的山顶和山坡遭到破坏。数据表明，村民对于当地的环境卫生改善项目较为认可，在实际调研中发现几乎所到村的道路两旁无垃圾乱扔现象，

道路整洁干净，村民也有意识自己负责自家门前卫生。空气、噪声污染不严重，大部分村民认为当地空气质量不错，因为工业企业少所以噪声污染不大，自然环境很适宜居住。

3.4.3 社区居民对旅游参与度感知

3 月调研结果显示，五个镇平均 65.86%的社区居民愿意从事与旅游相关的工作，62.99%的社区居民对黄山旅游发展感到满意。由此可见，愿意从事旅游相关工作的和对旅游现状感到满意的村民仅占 65%左右，不算太高。从主观上来讲村民均愿意从事与旅游相关工作，但由于个人劳动技能水平限制，部分村民可能无法胜任这类工作，造成结构性失业。

9 月调研结果中，73.2%的受访者表示关心黄山风景区的旅游发展，46.8%的受访者表示“当地旅游发展与我的家庭关系密切”，35.6%表示“我的工作和旅游相关”，24.6%表示“我参与了当地旅游发展的管理”，24.9%的人认为“当地旅游发展实际上由村民和村集体说了算”，20.1%的人表示“我参与了当地旅游规划的制定”。

各镇社区居民的旅游参与度各有不同，这在很大程度上与黄山旅游发展对当地的辐射效用有关。例如汤口镇受黄山风景区旅游发展影响最大，是黄山风景区最主要旅游生活服务和接待基地，劳动力 80%从事于旅游，除了为旅游企业打工外，镇上不乏个体私营业主。相比之下，三口镇由于距离和资源因素，黄山风景区对其带动作用不是很明显，村民从事旅游工作的机会很少。

3.4.4 社区居民旅游支持度

9 月的调研增加了社区居民旅游支持度的问题。得到 92.7%的居民欢迎旅游者来当地旅游，89.1%的居民支持黄山风景区旅游进一步发展，85.1%的居民表示政府应加大对黄山风景区的旅游宣传，79.7%的表示村民应该与游客之间进行文化交流，69.6%的居民乐意参与到黄山风景区旅游业开发中去，这部分均值也较高，评价差异也相对较小，显示出了居民对游客的友好态度，同时，也显示出居民对黄山风景区旅游业进一步发展的支持。

在问到是否愿意参加旅游培训时，有 63.8%的居民表示愿意参加，只有 11.6%的居民表示不愿意参加，24.6%的居民持中立态度，数据表明，大部分居民愿意参加旅游培训，从而

投身于当地旅游业发展当中。居民对本地旅游业发展的现状感到满意这项的均值最低，为3.44，有 55.5%的居民感到满意，21.0%的居民感到不满意，23.7%的居民持中立态度，这就提醒当地相关部门，在发展当地旅游业的同时，要提升居民的满意度，从而获得更多的支持。

3.4.5 社区居民所关注的旅游可持续相关问题

村民所关注的旅游可持续发展问题主要集中在四个方面：

一是**经济发展方面**，总体上大部分居民希望大力发展旅游，解决就业。但处于不同旅游发展阶段的村镇的关注点略有差别。在旅游发展相对不成熟的村镇，村民对旅游持积极乐观态度，希望通过旅游发展带动当地经济，创造更多就业机会，增加收入，改善生活质量。在旅游发展相对成熟的村镇，如汤口镇，这里村民所关心的问题与其他镇村民略有不同，他们希望提高当地的旅游经营管理水平，提升景区服务质量。旅游发展模型上，希望能够多引进一些旅游项目，有大型企业或外商过来投资。农副产品加工方面，茶叶种植户希望提高茶叶价格，通过生产加工增加茶叶附加值，提升利润空间，打造属于自己的茶品牌。

二是**基础设施及管理方面**，增加民生工程建设，是更多的村民生活及工作环境得到改善。交通方面，交通拥挤问题各个村镇各有不同，例如，汤口镇游客接待较多，村民反映需要采取措施保证道路交通畅通，有村民认为外来车辆太多，汽车尾气排放太多，需要加强管理；在游客量不多的村镇交通拥挤并不被村民所感知。此外，旅游接待设施方面，食宿设施数量和质量需要兼顾，还要有多一点的娱乐设施。给排水方面，村民反映生活污水没有处理就直接排入地下或附近河里。医疗、教育也是村民关心的问题。

三是**关于土地利用及房屋建设方面**，有村民认为，本地土地资源有限，应当有序的开发，不能操之过急。提出要尽快解决严禁建房和开发停滞的矛盾。

四是**对政府的意见**，包括社区干部应该多到基层看看，了解一下弱势群体，不要只注意做一些表面工程，关注一下民生，多听听老百姓的意见。

小结：

各村镇发展不均衡，参与旅游业的面不广。目前看来，旅游业对汤口镇的经济带动最大、带动面最广，对全镇产业经济起着不可替代的作用。其他几个镇的旅游接待业和景区经

营成效不显著，这是没有参与到大黄山旅游产业中的表层表现。深层表现是，缓冲区（包括汤口镇）用于旅游接待、餐饮的原料（蔬菜、水果等）都并非产自本地。五镇的水稻、蔬菜等农产品只处于自给自足或者家门口销售，没有参与到整个大黄山旅游发展产业链条中。

居民对当地的依恋感情较深，对所在村庄满意度的高低取决于诸多因素。新农村建设当中房屋的建造是否让居民满意，排水管的设计是否合理等都成为了居民对所在村庄满意度评价时考虑的因素。

居民普遍认为当地自然环境很有价值，在环境保护方法上赞成政府从旅游收入中拿出一部分来保护环境的做法。几乎所有的居民在环境保护方面都赞成持续性地保护，但在环境保护与经济发展哪个更重要的问题上，还需要进一步的引导与培训。

居民参与当地旅游业的愿望比较强烈，但实际参与旅游业的比例很小。在关系到社区居民自身利益的决策中，应该进一步增加社区居民的权利。

旅游给缓冲区居民带来了经济、社会、文化和环境四方面的影响。有利也有弊，72.3%的居民认为利大于弊。可见，居民认为旅游带来的好处大于其带来的坏处。

居民对当地旅游业的支持度普遍较高。表现在欢迎旅游者来本地旅游的热情上以及与游客进行文化交流的意愿上。

4 游客感知与满意度

4.1 游客态度与评价

4.1.1 游客对黄山旅游资源的评价

黄山游客对黄山风景区的自然风光评价很高，97.2%的游客赞同或者非常赞成黄山自然风光优美；游客对黄山文化内涵的认识不如自然景观，但仍有 76.7%的游客赞成或非常赞成黄山文化内涵丰富。

4.1.2 游客对黄山旅游服务的评价

游客对他们在旅游中接受的服务评价偏低，主要体现在游客对景区的食物质量、住宿质量、景区工作人员服务质量以及导游服务质量几个方面的评价偏低。50.9%的游客认为旅游目的地的食物质量一般，此外，23.1%的游客不认为旅游目的地的食物质量好，仅有 26%的游客赞成或非常赞成食物的质量好。48.9%的游客认为景区的住宿质量一般，认为景区住宿质量好的游客只占总游客的 33.4%。游客对于景区的食物和住宿质量的评价不高主要是由于食物和住宿的价高过高造成的，游客的心理不平衡，并不认为物有所值。游客对于景区工作人员的服务质量评价，包括游客对景区的索道服务人员，酒店服务人员以及巡逻管理人员的服务质量评价。只有 52.1%的游客赞成或者非常赞成景区服务人员的服务质量好，35.9%的游客认为景区服务人员的服务质量一般。游客对于导游的服务质量的评价高于景区工作人员的服务质量，但是仍然只有 61.35%的游客赞成或者非常赞成导游的服务质量好。团队游客认为导游收了自己的佣金，对自己提供服务是理所应当的。导游出于团队整体利益出发，不能够满足个别游客的要求，造成同一个团队的游客对导游的服务质量评价不一。

4.1.3 游客对黄山景区环境评价

游客对景区整体环境方面评价较高，83.2%的游客赞成或者非常赞成黄山风景区的环境干净整洁。每天有大量的游客进入风景区旅游，导游用扩音器解说、游客之间的话语交流等都有可能会带来噪声。在 5 月份和 9 月份的问卷调研中，赞成或者非常赞成景区噪声很小的

游客占总游客的 73.4%，说明游客在景区的游玩过程中，大部分游客不会被噪声所困扰。景区公厕的卫生得到了超过一半的游客的肯定，但是认为景区公厕卫生程度一半或者不够卫生的游客占了总数的 35%，所以景区公厕的卫生也应该有所改善。对于景区设施方面，有不少游客希望增加景区公厕以及石凳等休息设施。景区管理者可以考虑游客的建议，酌情在适当的位置增设公厕以及方便游客的休息设施。65.77%游客认为黄山交通便利，游客去黄山旅游的交通便利性包括外部交通便利性和内部交通便利性。山岳型景区的观光道路较窄，游客游览的线路较为相似，难免造成景区的局部拥挤。关于景区的拥挤程度， 41.4%的游客认为他们在景区的游览中感受到了拥挤，认为景区不拥挤的游客只占总游客数的 28.7%。索道排队以及著名景点排队拍照都会给游客造成拥挤的感觉。尽管大部分游客感知到游览中的拥挤，他们表示能够理解，因为人们都希望可以到著名的景区去旅游，特别是像黄山这样的世界名山。

4.1.4 游客与本地人的接触

到黄山风景区旅游的游客，特别是团队游客与黄山风景区周边的社区居民接触的机会非常少，在游客满意度的调查中，只有 29.3%的游客认为自己与本地人的接触多，超过一半的游客与本地人接触少或者基本没有接触。因为游客与当地人的接触不多，因此，游客对本地人的热情友好感知很弱，超过一半的游客几乎没有感知。

4.1.5 游客的其他体验活动

游客在整个旅游过程中除了对景区自然风光的欣赏之外，很少参与其他的旅游活动。只有 23.6%的游客表示购买到了很好的地方纪念品和工艺品，只有 27.4%的游客表示有机会享受了地方美食，这也是造成游客与本地人交流机会少的因素。据调查者的观察和了解，购买和邮寄明信片的游客非常少，这主要是因为山上明信片的价格较高，游客停留的时间有限，而山下的邮政服务点较少且比较隐蔽。

4.1.6 游客总体满意度

在 3 月份的调研中，88%的游客对景区的总体评价是满意或者非常满意，89.0%的游客

认为实际的旅游体验比预期体验好或者与预想体验一致。在 5 月份和 9 月份游客调查中，认为本次旅游物有所值的游客只占总游客的 62.1%，这主要是游客认为景区的门票、索道票过高，或者景区的食物和住宿收费过高而引起的。对旅游整体感到满意或者非常的游客占总数的 76.8%，说明景区为提高游客旅游总体满意度仍大有可为。

4.1.7 游客的重游意愿与推荐意愿

游客结束自己的旅游之后，如果获得了较为满意的体验，常常希望将该旅游目的推荐给其他人或者希望再次来黄山旅游，因此游客的推荐意愿以及重游意愿可以作为反映游客满意度的指标。78.5%的游客具有向其他人推荐黄山风景区的意愿，超过 50%的游客具有重游黄山风景区的意愿。

4.1.8 游客对旅游安全的感知

游览秩序会影响游客在旅游中的安全，30%的游客认为景区的游览秩序一般，46.42%的游客对景区的游览秩序感到满意。此外，索道、游步道以及护栏等景区设施方面的安全性也会影响游客的旅游安全。77.5 赞成或非常赞成黄山风景区的索道是安全的，60%的游客赞成或非常赞成景区的游步道和护栏是安全的，30.15%的游客认为游步道和护栏的安全性一般。在调查中发现，游客对旅游安全的感知跟外部环境条件有关，如我们在 3 月份的 36 名调查对象中，有 15 名游客在问卷中提到旅游中的道路安全（主要是游步道）：一方面游客反映道路中的积雪没有得到及时清理；另一方面是道路没有护栏或者护栏的高度不够。

4.2 解说系统有效性

旅游解说系统是目的地诸要素中十分重要的组成部分，是旅游目的地的教育功能、服务功能得以发挥的必要基础，涉及导游员自身素质、解说牌设计、游客中心等各重要环节，是游客获得满意的旅游体验的影响因素之一。我们 9 月份对解说系统的有效性做了着重调查，包括游客获得解说信息的渠道调查，游客对各种解说渠道对于自己在景区旅游时所起到的作用评价，游客阅读景区解说牌的情况以及解说系统对游客的意义等几个方面。

4.2.1 旅客在游览过程中获得信息的渠道

调查表明，旅游过程中团队游客的绝大部分信息来源于导游的解说，除此之外，“景区线路、设施指示牌”和“景点解说牌”是大部分人获得景区相关信息的渠道64%的游客使用了景区的线路及设施指示牌，54%的游客阅读了景点解说牌。可见，景区线路指示牌和景点解说牌对于游客获取景区的信息非常重要，特别是对于自助游的游客来说。21%的游客会向“游客中心人员咨询”，但有游客提到“向服务人员问路时，不及时作出回复”。其实，据调查，黄山风景区游客中心并没有专职的人员提供咨询服务，游客提到的咨询对象一般指的是游客中心的售货人员。有少量的游客通过电子屏幕视频、景区宣传小册子、地质博物馆以及书和光盘等出版物获得景区解说信息，但是这些解说渠道的使用一般是在游客游览完景区之后。游客结束在景区的游玩以后，乘坐索道或者步行下山，会在游客中心稍作停留，在停留的这段时间，游客才会有时间观看电子屏幕、购买书和光盘等出版物。据观察，景区游客中心并没有宣传小册子。至于地质博物馆的使用，则依据游客的游览线路安排，一般来说，从云谷寺上山的游客没有时间参观地质博物馆，只有从云谷寺下山的游客才有可能参观地质博物馆。

4.2.2 不同种解说渠道对游客获取解说信息所起到的作用

总体而言，“导游、工作人员解说”、“景区路线、设施指示牌”以及“景点解说牌”对景区旅游作用较大，而“地质博物馆”、“宣传小册子”、“电子屏幕视频播放”、“出版物”等对于游客在景区旅游中的作用都很小，这主要是与游客自身使用到的解说渠道有关，如果游客没有使用到该解说渠道，那么它的重要性程度当然较小。事实上，“电子屏幕视频播放”，由于等候室的座位较少（≤50），大部分游客都不愿意站着观看解说，所以通过电子视频了解解说信息的作用减弱。此外，由于一日游的游客较多，游客不会把宝贵的体验时间放在观看电子解说上，从而导致了电子屏幕的有效性降低。而地质博物馆分值较低主要是因为团队游客占比例大，导游带的线路通常都会忽略地质博物馆的解说。再者，地质博物馆内的陈列的大多是黄山的地质方面作品，对于大部分游客来说较为专业，因而对一般的游客来讲吸引力不大。

4.2.3 游客阅读景区解说牌的情况介绍

虽然游客在旅游过程中的相当部分信息来源于景区解说牌，包括线路指示牌和景点解说牌，但游客对景区内各景点的解说阅读情况不佳。仅有 32%的游客会仔细阅读解说牌内容，有 50%的游客只是粗略阅读或只读感兴趣的景点的解说，而“只在休息时阅读景点解说牌”和“不读解说牌”的游客分别占了 8%和 10%。

游客对黄山风景区线路指示牌的评价较高，但景区仍有必要进一步完善景区的路标系统。57%的游客认为“（现有）路标内容很清楚，帮助很大”，并且 24%的游客认为“（现有）路标位置显眼，很容易找到”，从而肯定了路标设置的合理性和系统性。但仍有多达 26%的游客认为“路口缺少标识，找不到路”，并且反映在意见/建议栏上的建议有 32 人次（24.24%）提到 “路标少”。景区管理者应该根据实际情况完善原有路标以及线路指示牌。

大部分（66%）的游客能够从景点解说牌中获得想要了解的信息。其他游客对于景点解说牌的内容评价不高：23%的游客认为内容不够生动有趣，提不起阅读兴趣；12%的游客认为“信息不专业不全面，有错误”；10%的游客认为“内容过于不专业，读不懂”。另外，有游客提到“（景区要）在黄山文化方面做足工作，目前感受不出反映黄山文化方面的东西，或者太少”。因此，景区管理者可以考虑适时更新解说信息或方式，有意识强化黄山文化，毕竟黄山是世界自然遗产，也是世界文化遗产，有必要对黄山的文化内涵加以宣传。

4.2.4 解说系统的意义

解说系统能够影响游客旅游体验，如“增加旅游价值感”、“激发（他们）对新奇事物的好奇心”、“增加行程中的乐趣”以及“减少了行程中不安全感”。大部分游客表示在旅游过程中，导游的解说一定程度上起到了教育的作用，使得旅游中的教育价值提高。此外，游客能够通过解说系统加深对黄山自然环境和黄山文化的理解。虽然有 79.89%的游客认为解说系统可以激励环保行为，但仍有 73.8%和 59.3%的游客建议景区加强环保工作和和不文明行为的管理力度。

5 旅游的经济影响

5.1 旅游收入

根据本年监测调研获得的数据，黄山风景区 2011 年累计接待入山游客 2743999 人，同比增长 8.96%；索道业务累计运送游客 4795459 人次，同比增长 11.24%；整个黄山旅游集团 2011 年收入超过 181942 万元人民币，同比增长 10.13%。

其周边低山景点的接待游客数和旅游收入详见 3.2.3-表 10-12.

5.2 旅游与就业

本期监测得到，股份公司在景区的员工 2299 人，其中固定职工 2245 人，季节性员工 54 人。汤口本地职工人数 967 人左右（景区 278 人，黄山区 1191 人，大致推算）。男女比例为：男性职工占 50.7%，女性职工占 49.3%。

本期调研了解到，黄山风景区将山上的挑包、抬轿、小吃手工艺摊点等面向游客的经营活动承包给汤口旅游开发公司，公司会以本镇各行政村为单位，按照人口多少分配岗位名额。名额下派到各个村以后，各个村从符合条件报名的村民中以抽签方式决定最终获得岗位的名额。这些被抽中的村民就可以在该年内上山从事风景区安排的工作，并领取工资。

周边村镇的旅游就业情况详见 3.2.

5.2 旅游季节性程度

从图 9 可知，黄山风景区接待游客量继续存在季节性变化，旺季持续时间较长，游客数量在 4-10 月都保持较高的水平，为旺季（共 7 个月）；在 11-3 月较少，为淡季（共 5 个月）。黄山风景区 2011 年旺季的游客总量占全年的 79.58%；接待游客最多的旺月（10 月）与接待人数最少的淡月（1 月）接待量的比率为 6.12。

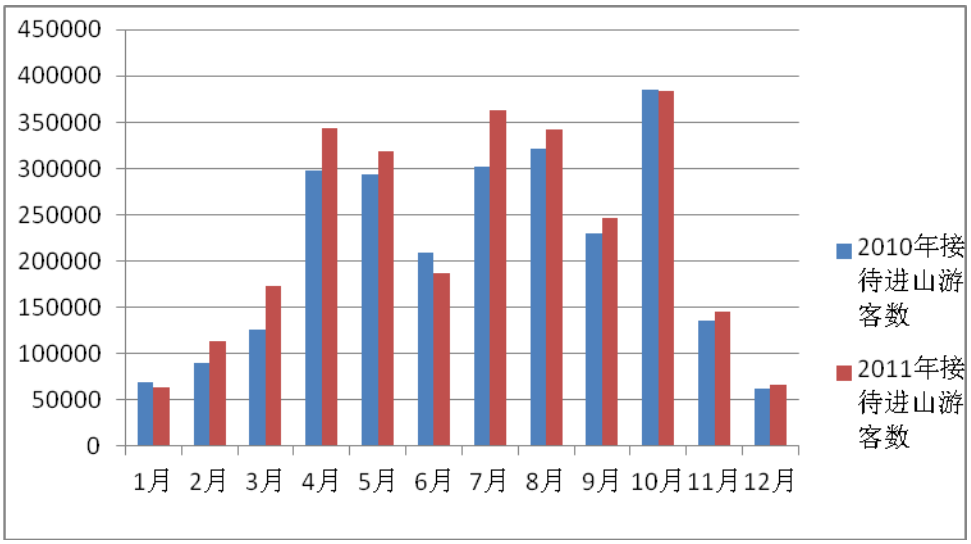


图 9　黄山风景区 2010-2011 年各个月份进山游客数量分布

资料来源：黄山旅游集团有限公司计统科

6 组织与管理

6.1 科学保护资源与环境方面的成绩

黄山风景区的管理机构最早追溯于“黄山建设委员会”。1931-1934 年，原中华民国国务总理许世英（以“保护资源环境、发展旅游经济、光大风景名胜”作为宗旨）发起设立“黄山建设委员会”，开创中国“国家公园”管理模式。

1982 年，黄山在中国风景区最早启动《风景区总体规划》编制；1989 年，安徽省人大颁布《黄山风景名胜区管理条例》，这是中国风景区保护与管理的最早立法。

1998 年，世界遗产委员会第 22 次特别会议称黄山“是一个杰出的景区，是一个管理得很好的遗产地，是一个有着大量游客到访一个复杂景区的优秀管理的亚洲示范”。

2005 年，委托清华大学修订编制《黄山风景区总体规划（2007-2025）》，提炼了可持续发展思想：1）平衡科学保护与可持续发展；2）注重公众教育与游客体验；3）统筹景区内外有序发展；4）展示特色性与文化性；5）处理好理论前瞻性与现实操作性。

近年来，围绕系统化战略、精细化管理、人性化服务、数字化支撑，黄山风景区管委会（HSAC）进行了系列探索：

- HSAC 牵头制订的《景点封闭轮休规范》、《古树名木保护管理规范》等标准成为了省级标准；《景区游步道建设要求》、《景区环境保洁要求》等标准正申报国家行业标准。
- 开展了“阻击松材线虫病专项行动”，建立了 100 千米长、4 千米宽的“生物隔离带”。启动“黄山生物多样性保护”研究项目（该项目总投资 1300 万美元，涵盖了黄山市全市 9800 多平方公里范围内的动、植物本底资源调查与研究）。
- 推广“山上游、山下住”；合理确定景区日接待的最佳容量与最大容量；推广“冬游”产品，促进旅游季节性协调发展；实施产品线路管理，通过“三预”（预测/预约/预警）等机制，实现假日旅游的“削峰、调谷”。

- 与国家各部委合作，先后启动“全国风景名胜区数字化示范基地”（中国风景名胜区协会/中国电子学会）、“全国旅游标准化试点单位”（国家旅游局）、“全国低碳旅游示范区”（中华环保联合会/中国旅游景区协会）、“国家旅游气象服务示范区”（国家气象局）、“国家旅游安全应急救援黄山基地”（国家安监局/国家旅游局）等项目建设。

- 进一步完善黄山遗产博物馆、黄山地质博物馆、黄山书画研究院、黄山游客中心的教育功能，系统展示黄山自然与人文资源、可持续发展历程、景区管理方针与要求。

- 同 30 多家媒体保持友好伙伴关系，向公众广泛宣传可持续发展；与国家旅游局、中央电视台联合拍摄“品质旅游-伴你远行”公益广告；与全国 20 多家知名景区发表“绿色生活-低碳发展”黄山联合宣言。

- 与 20 多家知名高校以及科研机构深化合作关系：共同组建“南京大学旅游可持续发展研究暨南京大学博士后流动站黄山基地”、“中山大学黄山旅游研究基地”等；聘请知名专家担任黄山资源保护与环境管理“首席科学家”。

6.2 在旅游发展上的标兵

黄山是中国旅游胜地，是中国现代旅游业的“发轫地”。

1979 年，中国国家领导人邓小平视察黄山并发表著名的“黄山谈话”，掀开中国旅游业改革开放的序幕，黄山因此成为中国旅游业改革开放的“发轫地”。

1996 年，“黄山旅游”股票上市（成为中国第一支“全要素旅游概念股”）；“黄山旅游”获得了中国“驰名商标”。

1999 年，黄山风景区年游客接待量突破 100 万人；2007 年，年接待量突破 200 万人；2012 年，年接待游客达到 300 万人。越来越多的人体验到了黄山“具有世界意义的天然美景”、感受到了黄山“色彩斑斓的多元文化”。

截止 2011 年底，HSAC 所组建的黄山旅游集团（经营范围涵盖旅游景区、饭店、旅行社、旅游交通、文化产业、电子商务、餐饮产业、旅游商品物流等产业）总资产 50.7 亿元，下

属企业 50 多家，员工超过 5000 人，2009-2011 年，连续三年入选“中国旅游集团 20 强”。

目前，HSAC 与黄山市政府合作，启动了“智慧黄山”项目，将全市旅游景区、星级饭店、旅行社、“农家乐”等服务项目进行有效整合（既为来访者提供了完整的区域旅游策划方案，又能实现 HSAC 与各利益相关者携手共赢）。

2010 年，HSAC 提出“转型发展”（强调“在发展理念上要早转、快转；在发展方式上要转新、转活；在提升品质上要转优、转精；在发展路径上要转大、转强”）。据此编制了《黄山风景区“十二五”发展规划》（2011-2015）。到 2015 年，年接待游客将接近于 360 万人，年旅游总收入将超过 60 亿元。“黄山旅游”将继续作为旅游龙头，辐射和影响皖南地区乃至长三角地区旅游业可持续发展。

6.3 与国际同行的交流

HSAC 围绕着“肩负历史使命，保护好世界双重遗产地；抢抓时代机遇，建设好世界一流目的地”的目标，一方面坚持“绿色”发展，另一方面坚持开放发展，加强国际交流合作。

先后与瑞士少女峰（2002 年）、美国约塞米蒂公园（2006 年）、希腊莱斯沃斯石化森林公园（2008 年）、新西兰凯库拉观鲸公司（2011 年）缔结了友好关系；近期，将与加拿大班芙国家公园缔结为友好公园（与美国黄石国家公园以及澳大利亚、俄罗斯、巴西等国家的知名公园与世界遗产地之间的联系正在加快推进）。

HSAC 在亚洲率先获得了联合国教科文组织(UNESCO)“文化景观保护与管理国际荣誉奖”（2000 年）、世界旅游业理事会(WTTC)“全球目的地管理奖”（2010 年）。

于 2008 年 3 月起，黄山与 GSTC/UNWTO/UNEP/UNF（全球可持续旅游委员会、联合国世界旅游组织、联合国环境规划署、联合国基金会）等国际组织合作推进“世界遗产地可持续发展(黄山)观测区”（全球首个）项目建设。并于 2012 年与上述国际组织合作建设了“全球目的地可持续旅游标准(黄山)实验区”（全球首批）。

2011 年的亚太旅游协会（PATA）六十周年庆典大会上，HSAC 阐述“善行旅游”（友善的旅行与游览）的理念与内涵，被 PATA 宣传推广（并被 UNESCO 借鉴吸收和创新发展）。

为贯彻联合国“千年发展目标”，HSAC 作为亚洲惟一的业界代表，参与起草和制订《全球目的地可持续旅游标准》（GSTC-D）并于 2012 年正式发布；同年，与世界优秀目的地中心(CED)合作，以中国黄山为蓝本起草和拟定“景区类”世界优秀目的地标准的基本框架。

未来，HSAC 将继续秉承“保护当头、发展为上；管理创新、和谐立山”这一职责与使命，稳步致力于“环境影响最小化、经济产出最大化、社会影响最优化、游览体验最佳化”四位一体的愿景与实践探索。

7 结论与建议

7.1 黄山风景区科学保护资源与环境一以贯之

1) 机构设置与政策支持：

两期监测显示，黄山风景区自然资源、文化资源以及环境保护方面的部门分工具有细致化的特点，从上至下都对资源与环境保护高度重视；政策方面，也具备了相对其他山地景区更为完善的体系，且执行力度强。

不足之处在于：由于这种细致化化分工的现状，使得各部门之间的信息共享渠道不够顺畅。建议进一步加强各部门之间的配合（如资源保护部门和旅游管理部门）与信息共享。

2) 科学保护与管理

经过多年的探索，黄山风景区在生态环境和古树名木方面已经形成系统性的、具有一定黄山特色的科学管理经验和保护方法，包括“一树一策”、“信息化监控”以及“景点封闭轮休”等制度；通过景区自身持续性的监测以及同科研单位和高校合作的等方式，黄山风景区的监测与科学研究体系已日渐成熟。

除自然资源的保护以外，黄山风景区在文化资源的保护与修缮方面也做出很多努力，包括积极推进文物认定工作、普查与人工监测工作等。

环境保护方面，黄山风景区实施严格的管理与监控，2011-2012 年监测数据表明目前黄山风景区水、声、大气环境质量良好，环境质量全部达标并在 2006-2011 年期间得及保持。

不足之处在于：黄山风景区与周边社区和低山景点的资源与环境保护紧密相关，但两期调研均发现，两者却相对独立，且周边地区环境保护仍然存在一些问题（如居民所反映的汤口镇逍遥溪水质不断下降），今后需要进一步加强周边地区的环境监测与资源保护工作；另一方面，建议黄山风景区日常监测的监测点设置需要考虑核心区和缓冲区的综合情况，在不同类型的区域分别设点监测。

7.2 周边社区旅游发展程度不同

本期的社区监测走访了黄山风景区缓冲区的五个镇，重点调研了与黄山风景区毗邻的16个行政村的情况。

根据调研结果，总体上，黄山周边社区居民的资源保护的意识正日益增强，旅游对汤口镇各个社区的带动作用非常明显，尤其是体现在解决当地居民就业和带动周边低山景点发展方面。低山景点的经营已成为汤口镇旅游创收的重要途径，同时，由于这些低山景点的景区工作人员中很大一部分为当地居民，因此低山景区的发展对于当地社区就业和提高居民收入水平方面的作用更为直接、显著。对其他四镇的带动作用相对弱一些。各镇均有自身的优势资源，发展产业主要以农业经济为主，其他产业如轻工业、接待服务业各镇均有不同程度的发展：东门谭家桥镇的农家乐较为兴旺，东黄山、石门峡等低山景区经营情况也较为良好；北门耿城镇经济产业园建设成为拉动本镇 GDP 的一大优势产业；焦村、三口两镇由于地理位置略显劣势，以农业经济为主，旅游接待业处于萌芽阶段。

总体看来，周边社区发展态势良好，不足之处是，黄山风景区旅游与周边社区的链接度不够深广，导致缓冲区农业生产等产品没有就地参与到本地旅游产业链条中。今后需有意识地引导、扶持周边产业经济与黄山旅游协同发展，加强与周边社区的产业联系。

7.3 进一步开发与完善游客服务功能

黄山风景区的重要职能之一就是在资源保护的前提下，向游客提供游憩机会和相应的教育活动；为不同的游客提供多样性的服务。2006 年景区总体规划提出的游客管理目标如下：（1）在资源保护的前提下，游客对黄山风景名胜区提供的设施、服务和游憩机会的安全性、可获得性、可到达性、多样性和质量感到满意。（2）游客与公众了解并欣赏黄山风景名胜区为当代和子孙后代提供的资源；同时理解和接受相应的资源保护工作。

本期监测对游客满意度的调研结果显示，大部分来景区的游客对黄山旅游资源评价较高、对其行程总体表示满意，有一半以上的游客表示会重游或推荐。对景区安全评价一般，对景区服务质量评价偏低，主要表现在景区的食物、住宿、景区工作人员服务以及导游服务几个方面。这说明游客总体对黄山风景区是持相当认可的态度，但同时景区针对食、购、住

几项基本服务功能需进一步提升。调研发现，游客普遍表示与本地人接触较少，除观光旅游外，本地其他体验活动较为单一。这说明实际情况与实现游客深度体验的目标有一定差距，此课题值得进一步深入研究。

此外，对解说系统有效性的调研了解到，游客对景区解说系统的使用主要集中在道路指示、方向指示牌上，对于景物科学解说功能使用较少。这说明，游客教育功能仍有待进一步开发。一方面，要继续完善景区的标识系统（目前景区标识系统风格多样缺乏统一规划；英文标识与解说内容有待进一步丰富和完善、增强趣味性；注重对导游人员解说内容的全面开发）；另一方面，需加强黄山文化遗产方面的宣传与知识普及教育，并积极开发多元化的游客市场（文化游客、生态游客、国际游客等）。

7.4 监测信息的使用

黄山旅游可持续发展指标监测项目的最主要的目标之一，即能够建立起系统性的数据和信息收集渠道，并能够将收集到的信息成果共享给景区的各部门以及各利益相关者（社区、游客以及其他合作伙伴），通过推动各部门与各利益相关者的共同参与，从而达到推动黄山风景区旅游可持续发展的最终目标。

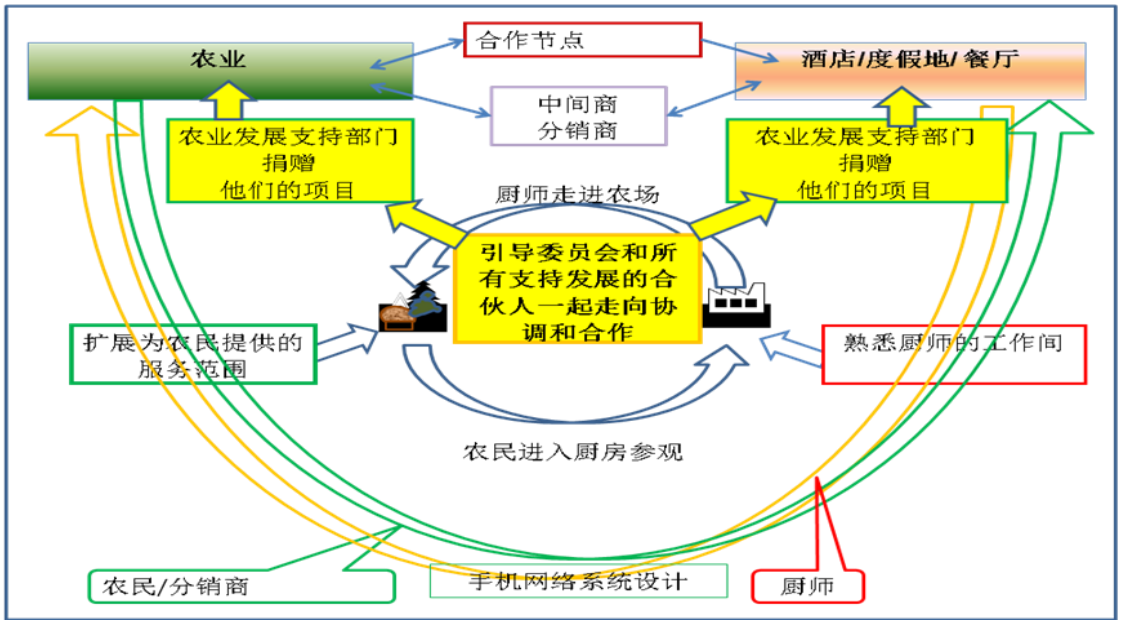
监测主要以常规监测与专题监测相结合的形式开展；对于每年所获得的监测信息与指标数据有如下建议：

1) 有效地使用监测信息有助于黄山风景区总体规划的规划目标的实现。通过时序性地收集指标数据，进行阶段性比较，可衡量黄山风景区总体规划的规划目标在不同阶段的实现程度。

2) 有效地使用监测信息有助于黄山风景区各个管理部门相关决策的科学化。建议从今年项目启动开始，在黄山风景区管理委员会建立历年的监测数据库，将监测报告与相关的指标数据汇总存档，并将相关信息运用于旅游管理的日常决策当中。

3) 有效地使用监测信息有助于加强黄山风景区同周边社区以及游客的信息沟通。旅游的规划与管理不能独立于目的地的重要主体——“当地社区”和“游客”而存在，通过监测项目可以同当地社区以及游客建立起一种信息沟通的渠道：一方面，通过

了解居民态度和游客满意度，可以有针对性地调整管理目标，采取有效措施处理同周边社区居民的关系以及改善游客体验；另一方面，很多指标和数据也可以直接作为周边社区居民以及游客的教育工具，使其更好地理解和接受相应的资源和环境保护工作。



2012 Monitoring Report on the Sustainable Tourism Development of Mt. Huangshan

Mt. Huangshan Scenic Zone Management Committee

Monitoring Center for UNWTO Sustainable Tourism Observatories

2012.12

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Table of Contents

1 Foreword

1.1 Background

Mt. Huangshan, as a world-class scenic zone, is an outstanding representative of mountain-type tourist destination in China. As a tourist destination integrated with many domestic and foreign credits, including first batch of top ten scenic zones in China, 5A tourist attractions in China, National Civilized Scenic Area, World Cultural and Natural Heritage, and World Geological Park, sustainable tourism development in Mt. Huangshan draws the attention of China and the world. On February 26, 2008, the World Tourism Organization and United Nations Educational, Scientific, and Cultural Organization formally established Mt. Huangshan observatory for WTO sustainable tourism destination and (Huangshan) observation area for sustainable tourism development of World Heritage Sites. The purpose is to collect a variety of indicators on the sustainable tourism development of Mt. Huangshan, and explore a development pattern that maximizes the tourism economy and minimizes negative environmental impacts at world heritage sites by monitoring for a long time ecological environment indicators of Mt. Huangshan, such as biodiversity and geological resource vulnerability.

On August 22, 2011, Monitoring Center for Sustainable UNWTO Tourism Observatories officially launched a five-year monitoring and management of Mt. Huangshan sustainable tourism development. With great support and active cooperation of Huangshan Scenic Zone Management Committee, Sun Yat-sen University has sent a task force to conduct field surveys in Huangshan in March, May and September, 2012 in succession. It is hopeful through a comprehensive survey of environmental, social and economic impacts from Huangshan tourism development to summarize and promote management experience of sustainable tourism development in the globe.

1.2 Monitoring Methodology

1.2.1 Monitoring Process

The range of this monitoring project includes the range of the Master Plan of the Huangshan Scenic Zone (2006), and part of the buffer zone. Specifically, the range includes an area of 160.6 km^2 of the Huangshan scenic zone, and surrounding five towns and one farm (Tangkou, Tanjiaqiao, Sankou, Gengcheng and Jiaocun Towns, and Yanghu Forest Farm in Huangshan District, with a total administrative area of about 490 km^2).

Based on the summary of monitoring results in first round, the supplement and adjustment have been performed in this survey below:

From March 8 to 14, 2011, the task force is composed of one professor from Center for Tourism Planning Research of Sun Yat-sen University (hereafter referred to as the "CTPR"), one project coordinator from Monitoring Center, one doctoral student and nine post-graduate students, and conducted the research of the following issues, through questionnaire, field survey and interview, including 1) Tourist satisfaction; 2) Tourist environmental behavior (further post data collection is required); 3) Satisfaction of the employees (on mountain); 4) Mt. Huangshan tourism satisfaction of the residents in buffer zone (five towns and one farm) and sixteen administrative villages surrounding Mt. Huangshan scenic zone; 5) Leakage loss of Mt. Huangshan tourism economy. In valid questionnaires, 176 copies from tourist have been collected, along with 196 copies from the employees, and 279 copies from the community (132 copies from Tangkou Town and 147 copies from the remaining four towns); the interviews, for main managers and employees in hotels, main principals and villagers in villages and towns in buffer zone, as well as procurement and HR departments in scenic zone, have been conducted, and then relevant second-hand data is collected.

From May 5 to 8, one project coordinator from Monitoring Center, five post-graduate students, and a staff from Huangshan Management Committee together completed supplementary research of Huangshan tourist satisfaction and economic leakage issues. 388 copies of valid questionnaires are collected, and then a sampling research of 265 shops in

Tunxi Old Street was conducted (47 shops).

From September 6 to 13, the task force composed of one professor, one doctoral student, two post-graduate students, and four undergraduate students went to Huangshan for third time, detailed tourist and resident questionnaires in previous two times, and conducted a larger sample-based research on Huangshan tourist satisfaction, the effectiveness of interpretation system, as well as the attitude of the resident in buffer zone. 406 copies of valid tourist questionnaires are collected and 329 copies of valid community questionnaires are obtained.

1.2.2 Screening of Key Topics and Indicators

Based on monitoring experience in first round, basic indicators for sustainable tourism development of Huangshan scenic zone have been developed, combined with UNWTO's indicators and methods, and "Master plan on tourism in Huangshan scenic zone" and practical tourism development in the zone, especially as shown in Table 1-1.

Table 1-1 Summary of Key Topics and Basic Indicators of Sustainable Tourism Development Monitoring of Huangshan Scenic Zone

	Key topics	Basic monitoring indicators	Regular monitoring?	Recommended monitoring frequency
Tourism and protection of resources and environment	**Biodiversity conservation**	21. Number of national key species	Yes	5 years
		22. Endangered species and quantities	No	5 years
		23. Quantity, distribution and protection levels of famous ancient trees	Yes	5 years
		24. Forest coverage	Yes	5 years

	Key topics	Basic monitoring indicators	Regular monitoring?	Recommended monitoring frequency
		25. Cooperative scientific research projects on resource conservation, tasks, cooperative agencies, durations	No	1 year
		26. Additional protective measures	No	2 years
	Conservation of cultural resources	27. Quantities of cliff stone inscriptions and cultural relics, and protection	Yes	5 years
		28. Funds used for cultural relic protection (restoration, protection and maintenance), and proportion thereof	No	1 year
		29. Additional policies and protective measures	No	5 years
	Tourist diffluence	30. Proportions of incoming tourists from different gates	Yes	1 year
	Aquatic	31. Conformance to	Yes	1 year

	Key topics	Basic monitoring indicators	Regular monitoring?	Recommended monitoring frequency
	environment	quality standard for surface water		
		32. Conformance to quality standard for drinking water	Yes	1 year
		33. Annual treatment capacity domestic sewage and peak daily treatment capacity in the busy season	Yes	1 year
	Acoustic environment	34. Conformance to standard for domestic and traffic noise	Yes	1 year
	Atmospheric environment	35. Conformance to standard for air quality	Yes	1 year
	Solid waste	36. Annual output of solid waste	Yes	1 year
		37. Method of waste disposal	Yes	5 years
		38. Proportion of recycled waste to total waste	Yes	1 year
	Reputation of main	39. Reputation of main attractions	No	3 years

	Key topics	Basic monitoring indicators	Regular monitoring?	Recommended monitoring frequency
	attractions			
	Construction area of reserves	40. Construction area and concentration of reserves	Yes	3 years
Tourism and community	**Tourism development level**	13. Community population (locals and non-locals)	Yes	3 years
		14. Number of attractions	Yes	1 year
		15. Number of accommodation facilities	Yes	1 year
		16. Number of tourists received	Yes	1 year
		17. Overall impact of tourism on local communities	No	2 years
	Residents' attitude and perception of impacts	18. Overall attitude of residents to tourism development (questionnaire)	No	1 year
		19. Resident perception of economic, social, cultural and environmental impacts of tourism	No	1 year

	Key topics	Basic monitoring indicators	Regular monitoring?	Recommended monitoring frequency
	Community engagement and awareness	20. Percentage (quantity) of community residents doing tourism-related jobs and main types	No	1 year
		21. Perception of tourism engagement by community residents	No	1 year
		22. Percentage of the concept "sustainable tourism development" by community residents	No	1 year
		23. Issues on tourism development concerned by community residents	No	1 year
	Satisfaction of business partners	24. Satisfaction of tour guides and travel agencies	No	2 years
Tourist perception and satisfaction	**Tourist satisfaction level**	9. Satisfaction of tourists with resources, services, overall environment and other aspects of	No	1 year

	Key topics	Basic monitoring indicators	Regular monitoring?	Recommended monitoring frequency
		Mt. Huangshan		
		10. Overall satisfaction of tourists	No	1 year
		11. Tourist perception of whether tourist experience is as expected	No	1 year
		12. Revisit rate of tourists and willingness for recommendation	No	1 year
		13. Tourist complaint rate of the Huangshan scenic zone	Yes	1 year
	Tourist safety	14. Incidence of tourist accidents	Yes	1 year
		15. Tourist safety perception in Mt. Huangshan	No	1 year
	Tourist education	16. Proportion of tourists participating in interpretation and education activities in Huangshan scenic zone	No	1 year

	Key topics	Basic monitoring indicators	Regular monitoring?	Recommended monitoring frequency
Economic impacts of tourism	**Tourism receipts**	8. Total number of tourists received by the Huangshan scenic zone	Yes	1 year
		9. Tourism statistics (gross tourism receipts, number of beds, number of tourists staying overnight and per capita spending, etc.)	Yes	1 year
		10. Number of tourists received by surrounding low-altitude attractions	Yes	1 year
		11. Tourism statistics of surrounding low-altitude attractions	Yes	1 year
	Seasonality of tourism	12. Tourist ratio in busy months to slack months	No	1 year
	Tourism and employment	13. Job opportunities created by tourism	No	1 year

	Key topics	Basic monitoring indicators	Regular monitoring?	Recommended monitoring frequency
		14. Satisfaction of tourism employees	No	2 years
	Economic driving role of tourism	(Topical study)	No	3 years
Organization and management	**Achievements and social recognition on organization and management**	Recognition in the industry and society	No	3 years

Main report body includes the following six parts, such as Tourism and resources, Environmental protection, Tourism and community, Tourist perception and satisfaction, Economic impacts of tourism, along with Conclusions and suggestions.

2 Tourism and Protection of Resources and Environment

2.1 Resources Protection Evaluation

2.1.1 Biodiversity Conservation Evaluation

Biodiversity conservation has always been a priority for the Huangshan scenic zone. This round of monitoring reveals that the overall situation of biodiversity conservation in the Huangshan scenic zone is very good relative to the surrounding areas and other ordinary scenic zones. The specific measures include:

(1) In terms of environmental protection, a strict enclosed rotation retirement system has been applied to attractions on a long-term basis, and the series of enclosed rotation retirement regulations was standardized in September 2010 (including the basic requirements for enclosed rotation retirement, enclosure period management and open period management). In the enclosed rotation retirement system, the high-altitude (above 1,350m) core attractions in the Huangshan scenic zone are enclosed rotationally to rehabilitate and upgrade the vegetation, and restore the ecological environment through a combination of artificial auxiliary and natural rehabilitation measures. Ecological monitoring and evaluation will also be performed. These attractions will be open depending on the degree of rehabilitation.

(2) In terms of famous ancient trees, the fifth survey of key famous ancient trees in the scenic zone was completed in 2009. A catalog of famous ancient trees has been established by identifying basic information, specific locations, altitudes, protection levels and ages of all famous ancient trees in the Huangshan scenic zone. Key famous ancient trees are subject to the conservation and management system of "one tactic per tree" with long-term monitoring, expert consultation, guardianship and emergency response.

(3) In terms of scientific research cooperation, the Bureau of Landscaping of the Huangshan scenic zone has been working together with scientific research agencies and universities in recent years to conduct biodiversity surveys, and studies on the conservation

and ecological maintenance of famous ancient trees. The key research tasks in recent years are summarized, shown in Table 3 below:

2.1.2 Evaluation of Cultural Resources

(1) In terms of preservation organization setup, the Huangshan Management Committee has further defined the cultural relic preservation and management tasks of different departments: The Cultural Development Center of the Politics Div. has set up the Cultural Relic Management Sect. and the Museum as the functional bodies for cultural relic preservation, responsible for the collection of cultural treasures and historical materials in different historical periods, and the display of world heritage and relics; the Planning and Land Div. has set up a heritage office to manage the world heritage of the whole mountain.

(2) In terms of policy support, except the state- and province-level cultural relic preservation and management regulations, the Huangshan scenic zone developed the Interim Regulations on the Preservation of Cultural Relics in the Huangshan Scenic Zone on September 21, 2006 to direct and regulate the internal cultural relic preservation work of the Huangshan scenic zone.

(3) In terms of cultural relic identification, there are 4 province-level key units of cultural relic preservation in the Huangshan scenic zone (Mercy light pavilion, Billows loft and Tower for watching waterfalls, Cliff stone inscriptions, and Ancient viewing pavilion), and an application for state-level key unit of cultural relic preservation has been filed for two attractions.

(4) In terms of long-term monitoring, except the national census and registration of cultural relics, the Huangshan Management Committee has conducted a census of cultural relics within the scenic zone, which is supplemented by ongoing manual monitoring. Currently, the lists have been established for 668 natural landscapes and 311 cultural landscapes after the census. Recently, IT system building has been conducted throughout the Huangshan scenic zone, and the electronic census database

for cultural relic preservation is being established and improved.

(5) In terms of cultural relic preservation and renovation, the costs for preservation and rehabilitation projects of completed cultural relic are summarized below:

Table 2-1 Costs of Cultural Relic Preservation and Renovation in Mt. Huangshan Scenic Zone

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Mercy light pavilion	30000	100000	730000	/	1250000	370000	/	520000	2000000
Tower for watching waterfalls	/	50000	/	700000	/	/	/	/	/
Lingxi Spring	60000	/	/	/	/	/	/	/	/
Songgu Nunnery	300000	/	/	/	/	/	/	/	450000
Diaoqiao Nunnery	/	210000		/	/	/	/	/	/
Mid-Hill Temple	/	/	/	/	/	700000	/	/	/
Others	/	/	/	200000		1500000	320000	800000	7550000
Total	390000	360000	730000	900000	1250000	2570000	320000	1320000	10000000

Total costs of cultural relic preservation and renovation: RMB 17.84 million Yuan.

Annual funds for cultural relic preservation: RMB 10 million Yuan.

Source: Cultural Relic Management Sect., Politics Div., Huangshan Management Committee

(6) The “restoration” of important cultural landscapes focuses always on the heritage policy, “Protection priority, salvage first, rational use, strengthened management”, along with the increase of special funds and technology investment in cultural relic preservation, and active implementation of cultural relic preservation and cultural landscape restoration, and outstanding achievements have been made. Since 1990s, the completed projects of cultural relic preservation mainly include:

In 1991, the implementation and completion of support renovation project of ancient architecture of Vairocana Hall.

In November 1995, the implementation and completion of overall renovation and environmental control projects of Tower for watching waterfalls.

In 1999, the implementation and completion of overall renovation project of roofing and wooden structure of ancient architecture of Vairocana Hall.

In May 2003, the implementation and completion of support renovation and surrounding environmental control projects of ancient architecture of Songgu Nunnery.

In July 2003, the implementation and completion of excavation and repair projects of Lingxi Spring.

In August 2003, the implementation and completion of protection and reinforcement projects of celebrity calligraphy and inscriptions of Mercy light pavilion.

In December 2004, the implementation and completion of support renovation and surrounding environmental control projects of ancient architecture of Diaoqiao Nunnery.

In October 2004, the implementation and completion of repainting and roofing repair projects of Tower for watching waterfalls.

In October 2005, the implementation and completion of salvage, renovation and surrounding environmental control projects of historic sites like Gate, Universal Gate tower, Kitchen, and Fayan Spring of Mercy light pavilion.

In August 2007, the implementation and completion of the improvement of lightning protection facilities of ancient complex of Mercy light pavilion.

In October 2007, the implementation and completion of renovation and lightning protection projects of ancient architecture of Mid-Hill Temple.

In May 2008, the implementation and completion of construction project of standard cultural relic storeroom of Huangshan Scenic Zone Museum.

In September 2009, the implementation and completion of four provincial protection projects like Mercy light pavilion, Ancient viewing pavilion, Cliff stone inscriptions along with Billows loft and Tower for watching waterfalls.

In November 2010, the implementation and completion of roofing repair project of ancient architecture of Mercy light pavilion.

In December 2011, the implementation and completion of repair project of Pool for Freeing Captive Tortoises of Mercy light pavilion.

In April 2012, the implementation and completion of repair project of Bo`an Master Tower.

2.2 Environmental Protection Evaluation

2.2.1 Aquatic Environment Evaluation

2.2.1.1 Surface Water Quality

The Huangshan scenic zone is a state-level scenic zone. According to the criteria for functional division of reclaimed water areas in the Environmental quality standard for surface water (GB3838-2002), and the measures for functional division of water areas of Huangshan City in Document HMEPB [1993] No.38, the national Class II standard applies to surface water resources in the Huangshan scenic zone. Currently, the monitoring agency of the scenic zone divides surface water resources in the zone into the 3 types of stream water, spring water

and reservoir water for monitoring purposes.

In stream water quality monitoring, there are 4 monitoring points in the Huangshan scenic zone – Jiulong Waterfall, main gate of Mt. Huangshan, Songgu Nunnery and Jiaocun, and the monitoring items include pH, dissolved oxygen, ammonia nitrogen, permanganate index and 5-day biochemical oxygen demand (BOD5). Aquatic environment quality is subject to time sequence analysis. It can be seen, from water quality monitoring data of Huangshan scenic zone in March, June, August and November, 2011, obtained in this survey, that the surface water quality of the Huangshan scenic zone is excellent, and meets or exceeds the Class II requirements in the Environmental quality standard for surface water (GB3838-2002). Water quality has improved greatly and can be maintained, where:

6) The pH values of all the 4 monitoring cross sections meet the requirements in the quality standard for surface aquatic environment.

7) The dissolved oxygen levels of all the 4 monitoring cross sections meet the Class I standard for surface water quality.

8) The biochemical oxygen demand value of all the 4 monitoring cross sections meet the standard for Class I surface water bodies.

9) The permanganate indexes of all the 4 monitoring cross sections are less than the Class I water quality standard.

10) The ammonia nitrogen levels of all the 4 monitoring cross sections are less than the national Class II water quality standard and the detection limit.

There are 15 springs in the scenic zone. In terms of spring water quality monitoring, based on the water quality monitoring and analysis results of the 4 major spring vents (hot spring, Mingxian Spring, Songgu Spring and Fayan Spring) in 2008, the spring water quality of the Huangshan scenic zone is good.

In terms of reservoir monitoring, based on the monitoring data provided by environmental protection office of Bureau of Landscaping of Huangshan scenic zone in 2011

and 2012, the water quality of the sources of the Yungu, Wuliqiao, Tianhai and Xihai Reservoirs in the Huangshan scenic zone meets the national Class II standard for surface water.

2.2.1.2 Drinking Water Quality

According to the provisions of "Anhui Provincial Environmental Protection Regulations" and "Anhui Provincial Environmental Protection Regulations on urban drinking water source", the scenic zone has performed the entrusted monitoring (Huangshan Municipal Environmental Monitoring Station as the monitoring unit) and issued the corresponding results of drinking water source since the fourth quarter of 2011, for the purpose of safety, protection and monitoring of drinking water source in the zone. The results show that drinking water quality in Huangshan Scenic Zone achieves 100%.

2.2.1.3 Sewage Treatment

In terms of domestic sewage, 13 sewage treatment facilities have been built in the scenic zone since 1986, including Yuping, Xihai (under construction), hot spring, Mid-Hill Temple, Management Committee building, emergency center, Tianhai, Beihai, Shilin, Yungu New Cableway, Yungu, Songgu, and Furong Ridge (under construction), with a total design daily treatment capacity of over 7,000 tons, and are being upgraded and improved gradually. To date, the improvement of 3 facilities (Tianhai, hot spring and Yuping) has been completed, realizing automatic control and 24-hour video monitoring, in which the sewage discharge standard of the Yuping and hot spring facilities has been increased to the Class I, Grade A standard in the Discharge standard of pollutants for municipal wastewater treatment plants (GB18917-2002).

The data provided by sewage management station in scenic in 2012 shows that domestic sewage disposal could totally reach 522000 tons per year, with 2,000 tons/day in disposal peak in high season (generally referred to "May Day" and "National Day of PRC"). In addition, reclaimed water facilities originally built in Yupinglou Hotel in the zone has been closed in hotel renovation alteration later (about in 2008-2009); in 2012, it is planned to

newly build reclaimed water facilities in overall reconstruction project in hot spring section.

2.2.1.4 Acoustic Environment Evaluation

In the Huangshan scenic zone, noise is from hotels, restaurants, stores, cultural and entertainment facilities, living activities and vehicle driving, and includes domestic and traffic noise.

In terms of noise control, two measures can promote noise monitoring and control in the scenic zone: 1) In September, 2004, New State Line Tourism Passenger Transport Co., Ltd. was founded in the Huangshan scenic zone, and vehicles of individual businesses and minibuses were prohibited from entering the zone, further improving traffic noise; 2) The monitoring station of the Huangshan scenic zone started noise monitoring in 2005. Environmental Protection Office of Huangshan Scenic Zone entrusted Environmental Monitoring Station of Huangshan City to monitor traffic noises in four points on June 20, 2006 and regional noises in eleven points, and the results show that: "Traffic noise in all points meets the standard while Yungu Temple and Yuping building feature the values beyond the standard in regional noise, with the values as 3.5dB (A) and 0.9dB (A) respectively." It is subject to loud noises from the tourists in the zone.

2.2.1.5 Atmospheric Environment Evaluation

Ambient air quality monitoring in the Huangshan scenic zone began in 1988. At the initial stage, this was done completely manually, and only 3 indicators were monitored – TSP, NO_2 and SO_2. In early 2004, the building of the automatic continuous air monitoring system began, which was completed at the end of September. The monitoring data in 2011 was obtained in this survey, with the data in recent five years as shown in Table 6:

Table 2-2 List of Key Air Pollutants in the Huangshan Scenic Zone Unit: mg/m3

Monitoring period	Annual average value of SO_2	Data range of SO_2	Annual average value of NO_2	Data range of NO_2	Annual average value of inhalable particulate matter (PM_{10})	Data range of inhalable particulate matter (PM_{10})
2007	0.006	0.004-0.007	0.005	0.004-0.006	0.027	0.020-0.034
2008	0.009	0.005-0.011	0.010	0.005-0.011	0.028	0.019-0.033
Monitoring period	**Annual average value of SO_2**	**Data range of SO_2**	**Annual average value of NO_2**	**Data range of NO_2**	**Annual average value of inhalable particulate matter (PM_{10})**	**Data range of inhalable particulate matter (PM_{10})**
2009	0.007	0.003-0.019	0.012	0.004-0.028	0.024	0.006-0.045
2010	0.007	0.003-0.025	0.014	0.008-0.018	0.029	0.012-0.045
2011	0.010	0.006-0.015	0.009	0.003-0.013	0.027	0.021-0.032

Source: Eco-environment monitoring station of Environmental Protection Office of Bureau of Landscaping (national Class I standard: SO_2 0.05 mg/m^3, NO_2 0.08 mg/m^3 and PM_{10} 0.05 mg/m^3)

It can be seen from the air quality monitoring data of 2007-2011 that SO_2 increased in 2011 and failed national Class I standard; the monitoring values of NO_2 and PM_{10} dropped, close to or more than national Class I standard. Generally, air quality in Huangshan scenic zone is kept well, and excellent.

2.2.1.6 Solid Waste Disposal

Compared to cities, the annual solid waste output of the Huangshan scenic zone is low and remains stable in general. Year-to-year fluctuations in output arise mainly from the amount of construction waste produced in development and construction, and the variation of the number of persons entering the mountain. In Mt. Huangshan, solid waste is located in 3 types of areas – near tourist paths, hotels, guesthouses and other places of business, and living areas of workers.

Currently, solid waste is subject to strict categorized management in the Huangshan scenic zone: Hazardous solid waste is collected, transported and stored specially by the environmental sanitation authority and other authorities concerned according to a strict hazardous waste management system depending on type (medical waste, waste transformers, waste chemicals, waste ink cartridges and waste batteries); general solid waste is divided into construction and domestic waste, where construction waste is subject to a strict declaration, supervision and inspection system, and an array of measures have been taken for domestic waste, including reduction, recycling and hazard-free treatment (sophisticated treatment system). The major measures include:

1) A purchasing and distribution center has been established to deliver clean food to the mountain, especially vegetables, poultry and aquatic products, and reduce waste output;

2) All waste must be bagged to reduce secondary pollution, and the waste classification system has been strengthened from the very beginning;

3) Routine cleaning is done manually, and the ropeway is used to carry waste in the peak period;

4) A special environmental sanitation plan has been developed to implement the "external disposal of internal waste" project.

Based on the statistical data during 2008-2010, the main type of solid waste in the scenic zone is domestic waste, with an annual output of about 4,000 tons; the modes of disposal

include incineration, biological treatment, land filling, waste recovery and organic waste recycling. In 2010-2011 comprehensive control plan issued by Management Committee of Huangshan Scenic Zone, “Methods of solid waste management in Huangshan Scenic Zone” was proposed and issued for the purpose of strengthening the management of solid waste like construction waste. It is advised to calculate solid waste arising from tourist activities separately.

3 Tourism and Community

3.1 Development Level in Buffer Zone

3.1.1 Basic Information

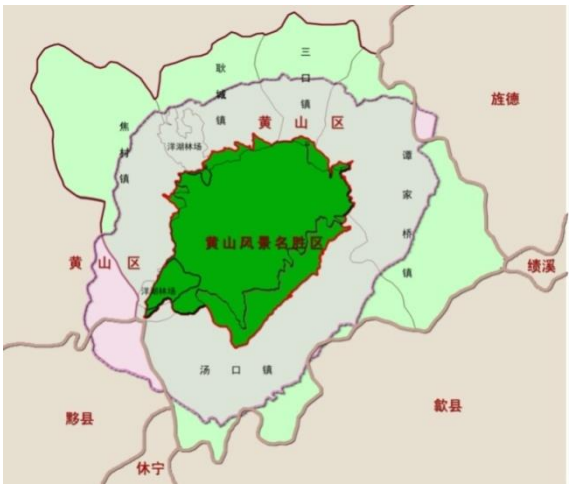


Figure 3-1 Map of Huangshan Scenic Zone and Adjacent Township[3]

According to the planning of Huangshan Scenic Zone (2007-2025), it covers 160.6 sq.km. The buffer zone includes its adjacent five towns and one farm, i.e. Tangkou, Tanjiaqiao, Sankou, Gengcheng and Jiaocun Towns, along with Yanghu Forest Farm. (See Figure 1)

Commonweal Yanghu Forest Farm, located in the west and north sides of Huangshan Scenic Zone, circles 16 km bordering line of the zone. Adjacent to Gengcheng, Gantang, Jiaocun, Tangkou and Longmen, it also is interfaced with Yixian County. The forest farm consists of four management and protection areas including Yanghu, Chencun, Xingling and Wushan, serving as an acting administrative body of a villager group engaging wood & bamboo, and now operates a total area of 35000 mu (12000 mu mountain field included in 127 sq.km of Huangshan Scenic Zone), with 26000 mu of national commonweal forest and total 132 persons within the farm. From 2011 Annual Huangshan Protection Report by Yanghu Forest Farm, it is mainly responsible for: forest fire prevention, resource protection,

[3] Source: 2007-2025 Master plan of Huangshan Scenic Zone

pest and disease prevention, and surrounding stability.[4]

Table 3-1 Basic Information Summary of Population and Geography in Five Towns

Town name	Resident population (person)		Area (km^2)	Regional scale		Adjacent to Huangshan (Total 16 administrative villages)	Government seat
	Local	Outsider		Administrative village	Villager group		
Tangkou (South)	15755	4733	129.35	5	74	Shancha, Tangkou, Zhaixi, Fangcun, and Gangcun	Tangkou Village
Tanjiaqiao (East)	About 8000		136	4	49	Zhongdun, Xinhong, and Changluo Villages	Zhongdun Village
Sankou (North)	10039		60	5	65	Wangjiaqiao and Ganglian Villages	Baiguoshu Village
Gengcheng (North)	About 10000		85.8	5	51	Chenglan, Fucun and Goucun	Jinqiao Village
Jiaocun (West)	16137		259	14	107	Zhangcun, Chencun, and Tangliu	Chencun

Sorting by collected survey data.

[4] See 2011 Annual Huangshan Protection Report by Yanghu Forest Farm in details.

Table 3-1 shows basic situations including population, area, regional scale, administrative villages adjacent to Huangshan Scenic Zone, and the seat of town government in five towns. As can be seen, Tangkou Town is the most populous, with all administrative villages adjacent to Huangshan, located in the Huangshan's south gate, most closely connected. Jiaocun Town features the widest geographical area, as an organic town with the largest national territorial area and the most agricultural population in Huangshan District.

3.1.2 Status Quo of Agricultural Economic Development

Table 3-2 Statistics of Agricultural Economic Development in Five Towns (2011)

Town name	Major industries	Annual net income per capita for rural area
Tangkou	Agriculture and forestry (wood, bamboo, tea, etc.), and tourism (80%)	10050
Tanjiaqiao	Agriculture and forestry (wood, bamboo, tea, etc.), migrant working, and marinated dishes business	7898
Sankou	Migrant working, tea planting, and pig breeding	7749
Gengcheng	Agriculture and forestry (wood, bamboo, tea, etc.), and more migrant working in Gantang	——
Jiaocun	Agriculture (wood, bamboo, tea, delicacies from land), poultry industry and migrant working (1/3 going out of the province)	7672

Source: 2011 Statistical Annual Reports of rural economy of the villages, along with the collection by survey group through interviews

Table 3-2 shows the statistics of status quo of agricultural economic development in five towns surrounding Huangshan Scenic Zone. From annual net income per capita for rural area accounted for most of the township's population, the agricultural economy in five towns in

buffer zone to Huangshan Scenic Zone features a good situation of “Highlighted South and Going hand in hand”. “Highlighted South” refers to that Tangkou Town in the south features a relatively high economic level, while “Going hand in hand” means that the remaining towns also have good economic level, with less gap.

Generally, the following agricultural and forestry products, including rice, vegetable, wood, bamboo and tea, are mainly common in buffer zone in Huangshan Scenic Zone. With less paddy fields and dry lands, the rice and vegetables are basically self-sufficient. The villagers will focus on tea planting, bamboo and wood felling in mountain field as well as delicacy breeding. With tea factories in different scales in towns, some of them form their own brands, like Xieyiyuan Tea Factory in Fangcun, Liubaili Houkui from east Huangshan in Tanjiaqiao, and Songgu Maofeng Tea in Gengcheng Town. These brands with their own tea planting bases are subject to the establishment of uniform standards in planting, picking, frying and packaging, along with fixed sales market. Some small tea factories purchase and fry the tea leaves from nearby local tea growers in the united form in the factories. Most tea growers select home-grown tea planting, sell fresh tea leaves to tea factories and traders, as well as fry the excessive leaves by their own boilers and then sell them to tea traders in tea trading markets in Gantang where Huangshan District government seats.

Towns feature their own advantages in agricultural economy:

Tang Town possesses main agricultural and forestry products like bamboo and tea, along with main agricultural and sideline products like bamboo shoots, oil-tea, and a small amount of peanuts and potatoes etc. Forest farm economy is now based on management and protection, with main agricultural products including bamboo shoots and tea. The town owns a vast mountain area, with 175300 mu of forest land, accounting for 94% of town area, one of provincial "bamboo village". The town has more than 30,000 mu of bamboo garden, with 6600000 live bamboos in stock volume and 500,000 bamboos in annual output; it is one of main origins of “Huangshan Maofeng Tea”, one of China top ten teas, and totals 8061 mu of tea plantation, with average elevation over 500 meters, good tea quality, and up to more than 100 tons of dry tea per year.

Tanjiaqiao Town has uneven land area per capita among villages, for example, some villages including Niejiashan own more than a dozen mu land per capita (Mountain Field), while some villages only possess a few lands. On the inside of Xinhong Village is a demonstration site in national project "East mulberry transferring to West", with mulberry plantations visible everywhere in the village (Figure 2). Similar to tea planting, family business model of silkworm breeding is available. Changluo Village in the most northern has more resources in mountain field, and the villagers plant and sell more Houkui tea in tea market, where Houkui meeting the standards is purchased, like Liubaili Houkui in East Huangshan (Shanghai) Tea Farm.

Villagers' income **in Wangjiaqiao Village under Sankou Town** comes mainly from tea and bamboo, with less paddy fields. The village has a total area of 178 mu (where: 70 mu paddy field, and 108 mu land), with 1.15 mu of arable land per capita, mainly for grain, cash crops and other crops; it has 2855 mu of forest land, with 1.03 mu per capita within 160 mu economic fruit land, mainly for Chinese chestnut and other cash crops; it owns 92 mu of water surface area, with 92 mu for farming; and it also possesses 1900 mu grass, 1975 mu barren hills and wasteland, together with 2000 mu other areas. People voluntarily develop a tea cooperatives, including more than 20 households, led by local villagers to run 600 mu of organic tea base in standardized means. The village also has a Yongle hoggery operated by old village party secretary in family business mode for several decades, where local villagers

are employed. The hoggery sells the pork inside the village in peak season, while outside in off-season.

Gangliang Village mainly engages in breeding (pork pig), with less tea and rice planting, self-sufficient to some extent. 70 or 80% of the villagers make a living as migrant workers. The village has a 500 mu raspberry base, partnered by bosses in Sankou and Hefei, where a boss in Hefei accounts for 70%. Base land is rented, with 400 jin rice per mu, and the farmers sign the contracts, and then the company signs a general contract with village committee. Because farmers possess the lands, they earn the rental, and the village committee is just providing the service-based support. Annual rent will be paid according to purchase price of the grain. Raspberry base will hire some temporary workers, seasonal, affording 400-500 jobs. Opposite to the office of village committee, an agricultural compound is under construction, covering 7 or 8 mu, expropriated by district agricultural compound; it is originally the farmland, located in front of the village committee.

Jinqiao Village under **Gengcheng town** (seat of town government) is mainly subject to light industry, with less agricultural economy. Xinhuangshan food factory, representative of the villager's independent business establishment, mainly produces the native products, bamboo shoots, dried mushrooms and delicacies, sold to Nanjing, Shanghai and other places.

Chenglan Village is currently dominated by agriculture, with main source of income from a power station (a power station uses hydraulic resources of the village, and therefore is required to pay part of the costs) and forest farm income. The villagers mainly raise the rice, tea and bamboo, with harvested rice for self-sufficiency, and sell the picked tea to tea markets in Huangshan District or to those customers directly purchasing tea here. Bamboo will be mainly sold to processing plants in the district for further processing. A farmer in the village is very successful in breeding Zhejiang lambs (Figure 3), part of which will be delivered to local catering industry, like barbecue sites in Tiger Park, and part of which will be sold to Zhejiang. A modern agricultural park, an agricultural project with more efforts made by the village, is under construction, with 500 mu of Chinese torreya based completed, and 400 mu of fruit tree plantations under construction for gold plum, cherry and grape, which will be

subject to by foreign investment, but will recruit the villagers for planting and caring. Fucun features the rice as main agricultural crop, supported by fruit forest, including grape, Chinese chestnut, chrysanthemum and tea, where rice planting area accounts for about 2800 mu, with a yield of 1000 jin per mu. Big farming households sell their grains to the grain supply centers and outside food processing plants, while common farmers take self-sufficiency. The cooperatives in economic fruit land, breeding and tea have been established in the village, mainly guiding the villagers in sales channels and production technology, with the output, except for tea, sold in the local. Village collective income comes mainly from the forest farm, founded in 1964, covering 3000 mu, directly managed by the village committee, and cultivated and comprehensive developed by surplus labor under the jurisdiction of the village group. Bamboo and artificial fir are mainly planted in the farm. The bamboo with 6000-7000 mu in entire village is produced and basically sold to large enterprises in the park. The villagers raise rice, besides bamboo. Rice is raised in 1600 mu, with annual output of about 800 jin per mu, but only single-season. The village has a deep processing enterprise for wild brake over the years and two seasonal workshops, all belonging to private operators, and there is no collective self-funded enterprise in the village.

Tangliu Village under **Jiaocun Town** has 160.1 hectares of tillable field, with 141.8

hectares of paddy field, 13.5 hectares of dry land and 1813 hectares of forest mountain field, and is mainly sourced from, in rural economy, the agriculture, forestry, tea, glossy ganoderma, black fungus, bamboo shoots, stringy stonecrop and other Chinese herbal medicines along with labor service export. Zhangcun features grain production at about 1.57 million kg (rice-based), one of the largest grain-producing villages in Huangshan District.

Summary:

From the survey, many agricultural and forest products are developed by various towns and villages with their own land resources. From supply chain, except for self-sufficiency, most products have been sold to the whole Huangshan City and surrounding provinces and cities through trading markets in Huangshan District. Driven by the interests of market economy, the followings, such as tea, mulberry, bamboo and wood, account for a major proportion in local products, with less rice and vegetable planting.

3.1.3 Project and Attractions Development

Table 3-3 Low Mountain Attractions in Buffer Zone

Town name	Recent investment promotion projects	Low mountain attractions	Tourism employment
Tangkou	Eight projects including Tangkou New Town, Zhijiang hotel renovation, and Huangshan Yunhai Resort renovation	Jade Valley, Jiulong Waterfall, Phoenix Home, Xiangxi rafting (2008), Monkey Valley, New Peach Land, Tianhu Lake (2009) and Fangcun Bamboo Sea	Tourism attractions operation, working in farmhouse and scenic spots, staff in hotels and other tourism industry, and working in Tangkou travel service company and New State Line Tourism Passenger Transport Co., Ltd
Tanjiaqiao	80% Huangshan tourism resorts like Huishang Group, East China Sea and East Huangshan concentrated in Zhongdun Village	Shimen canyon, Puren beach rafting (abolished in 2011), Yellow Emperor Home (abolished in 2011), East Huangshan tourism resort (2007), and Memorial of northward advance team of Red Army for Anti-Japanese (2010)	Working in scenic spots and reception companies
Sankou	Seven projects including China Green Garden, Changrong Ore Dressing, Picturesque Scenery,	Comprehensive tourism development in Fuzi Mountain (Longyi Cemetery), Raspberry processing and sightseeing	Less, working in Longyi Cemetery

Town name	Recent investment promotion projects	Low mountain attractions	Tourism employment
	Dongmao Pharmaceutical, Herbs Garden as well as Famous mountains and water	project, and Picturesque Scenery (Under construction)	
Gengcheng	Introduction of 16 companies in Jinqiao Science and Technology Industrial Park: Zhejiang Xingyue Copper, Anhui Jinding Boiler Co.,Ltd, Tianjin Houhai and others Modern agriculture demonstration area	Huangshan Tiger Park (2009), Furong Valley (2007) and Dragon waterfall (abolished in 2011) Real estate: Meirui Forest Story, Houhai Folk Garden, Tea Expo and tea garden	Less, services in scenic spots, and farmhouse operations (in Fucun)
Jiaocun	Anhua Villa, car camping club, and Buddhist cultural theme park	Rail cable car, and Cuiwei Temple	Less scenic infrastructure, waiters, tour guides, and seasonal farmhouse operation

It can be seen from recent investment promotion in Table 10 that Tangkou in the south and Gengcheng in the north out of five towns feature better development. Tangkou Town takes the advantage of close contact with Huangshan Scenic Zone in rapid progress in the development of real estate, large resort hotels and other projects, with the operation of low mountain attractions very optimistic too. Gengcheng Town develops early, due to geopolitical relations with the government of Huangshan District, and has some eco-industrial projects insides, as its main industry. The other three towns like Tanjiaqiao, Sankou and Jiaocun are

subject to slower project promotion due to geographical disadvantage, late development and introduction of less investment.

Table 3-4 Statistics of 2010-2011 Attractions Tourists (Person) and Tourism Receipts (Ten Thousand Yuan) in Buffer Zone

Year	2010		2011		Growth on year-on-year basis	
Attractions	Tourists received	Ticket sales	Tourists received	Ticket sales	Tourists received	Ticket sales
Jade Valley	729963	2754.50	887396	3754.05	21.57%	36.29%
Jiulong Waterfall	347609	748.04	415616	1003.49	19.56%	34.15%
Phoenix Home	190624	152.72	215100	210.61	12.84%	37.9%
Monkey Valley	27314	24.73	38358	33.31	40.43%	34.69%
Furong Valley	508589	1170.10	637611	1634.62	25.37%	39.7%
Shimen canyon	139485	198.20	218630	587.39	56.74%	196.36%
Tiger Park	50870	183.99	80201	400.35	57.66%	117.59%
Xiangxi rafting	220095	——	265567	——	20.66%	——
East Huangshan	194146	——	217650	——	10.8%	——
Tianhu	——	——	86000	——	——	——
Dragon	21501	16.51	536	——	——	——

Year	**2010**		**2011**		**Growth on year-on-year basis**	
waterfall						
Year	**2010**		**2011**		**Growth on year-on-year basis**	
Yellow Emperor Home	9084	9.07	1790	——	——	——
Puren beach rafting	54753	81.25	23970	——	——	——

Sorting by statistical information provided by District Tourism Committee

Table 11 reflects the tourists received and tourism receipts of low mountain attractions in recent two years in buffer zone. It can be seen that main attractions reception is well upwards: growth rate of ticket sales is basically remained at 35%. Specially Shimen canyon and Tiger Park achieve a growth of more than 100% in ticket sales. It is described through market promotion and group travel by travel agents that Huangshan tourism has better led the development of low mountain attractions in surrounding community, and played a role in the effect of the enterprises or village collective as developers. But at the same time, several attractions have, due to poor management, less unique resources and big market diffluence, been uncompetitive, and then closed or reorganized in 2011.

As "South Gate" of Huangshan Scenic Zone, Tangkou Town makes good use of unique geographical advantages and abundant resources, and achieves **90% economy from tourism,** with **80% labor force engaged in tourism,** and **80% fiscal revenue directly from tourism.** As the most important life service base and tourist base in Huangshan tourism, Tangkou Town has 18 travel agencies, more than 130 hotels with total rooms more than 12,000, including 13 star hotels, as well as 1 demonstration farmhouse at provincial level. Various extensible industries around the tourism have been developed rapidly, with nearly 1200 individual and private industrial and commercial business operators, and nearly 6,000 tourism practicers.

Table 3-5 Statistics of Tourists Received by Tangkou Town in 2011

Area	Total tourists received (ten thousand person-time)	Growth on year-on-year basis
Whole town	320	——
Various attractions	196.06	——
Jade Valley	90.9	22.69%
Jiulong Waterfall	42.09	20.08%
Phoenix Home	23.93	24.12%
Monkey Valley	3.82	38.41%
Xiangxi rafting	26.54	——
Tianhu	8.6	——

Source: Huangshan District People's Government http://zwgk.hsq.gov.cn/Read.aspx?id=31629

Among them, tourism development positioning is different in the villages. Tangkou is, due to south gate of Huangshan Scenic Zone, plus the connection with 205 national highway, 103 provincial highway and Beijing-Taipei expressway, provided with favorable conditions in developing accommodation, catering as well as other industries like specialty sales, so it is the most important service reception base in Huangshan. A variety of hotels, souvenir supermarket and shops have greatly boosted the local development. Shancha Village, an administrative village with the most abundant tourism resources in Tangkou Town, relies on Huangshan tourism development since 1987, and has built five scenic spots, including two national 4A spots, i.e. Jade Valley and Jiulong Waterfall, along with Phoenix Home, Tianhu spot, and Xiangxi rafting. It is said by village committee secretary that each spot is subject to unified management of each company which belongs to a related group and will pay 2% annual net profit to Shancha Village for collective construction in the village, especially the subsidies to villager groups not related to the attractions and infrastructure. Shancha Village received total 1.1 million persons in 2011 in five attractions, accounting for about half of the tourists in Huangshan Scenic Zone. Tourism receipts are RMB 87.65 million Yuan. Fangcun and Gangcun are just subject to a radiation effect due to geographic issues, where Fangcun

has built a Fangcun New Village around the village entrance at the side of 205 national highway to provide catering and accommodation services like hotels and farmhouse, to a certain extent eases tourist pressure in Tangkou in peak season and shunt part of the tourist in peak season; because Gangcun New Village is still under construction, radiation effect is relatively small, only with five or six farmhouses at the side of 103 provincial highway.

The followings are summarized through comprehensive analysis on industrial economy and employment structure in Tangkou Town:

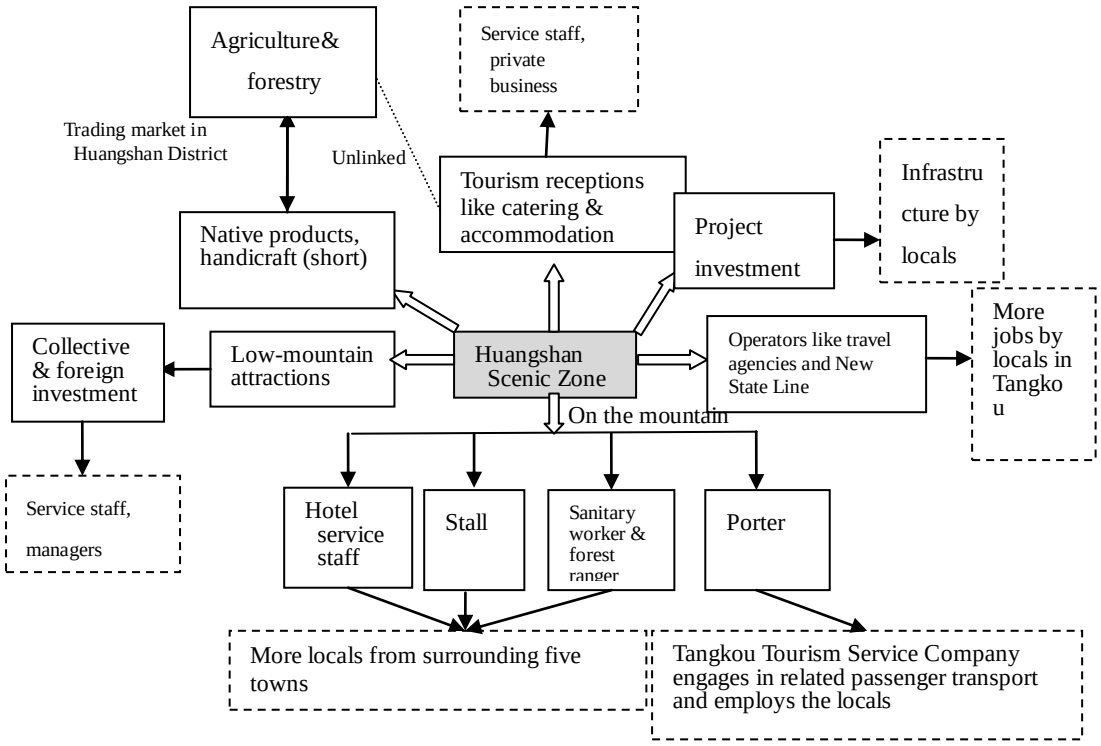


Figure 3-4 Industrial Relation Diagram for Tangkou Town in Huangshan Scenic Zone

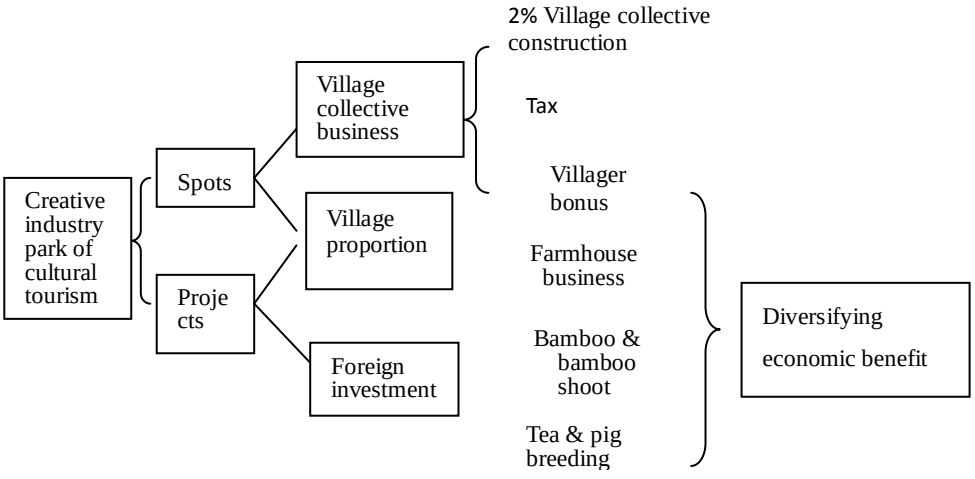


Figure 3-5 Diversifying Benefit Pattern in Shancha Village under Tangkou Town

80% of projects in **Tanjiaqiao Town** are concentrated in Zhongdun Village. Deputy head of Tanjiaqiao Town in the interview says that, in recent years, the projects on tourism investment promotion in the town are mainly form the Huishang Group and East China Sea projects, with the investment of more than one billion Yuan. These projects are basically contracted. But main problem currently facing is subject to slow progress, because the investors consider the market is not mature, so they make a low investment and construction scale, and slowly promote the projects after the land is obtained. Several major attractions are constructed, including Shimen canyon, Su Yu Memorial, Puren beach rafting, Yellow Emperor home, and East Huangshan tourism resort. Due to rafting accident in Yixian County in last summer, the rafting is strictly checked, and Puren Beach is re-acquired for planning adjustment. Yellow Emperor home under planning adjustment, built in 2002, is now acquired by 4 or 5 small companies.

Sankou Town has signed seven projects recently, including China Green Garden, Changrong Ore Dressing, Picturesque Scenery, Dongmao Pharmaceutical, Herbs Garden as well as Famous mountains and water, with contract amount up to RMB 560 million Yuan, where China Green Garden project has commenced while Changrong Ore Dressing project will soon be completed and put into production. Grid fields in comprehensive agricultural development projects have been basically completed, with 14.2 kilometers for machine cultivating and 13.9 kilometers for irrigation canal, and RMB 11 million Yuan has been invested. In comprehensive tourism development in Fuzi Mountain, Phase I and II Yangtian New Village have been constructed, and Phase III is under planning. Wangjiaqiao and Ganglian villages are really put into operation in these projects.

One of the most important tourism projects in **Wangjiaqiao** is Fuzi Mountain comprehensive project (Longyi Cemetery) covering more than 1000 mu, established as a humanistic, memorial and patriotism education base, a funeral reform demonstration base, and a tourism base by scenic lake, which is invested by Anhui Feihai Property with total 340 million Yuan and completed accumulative investment of RMB 164.18 million Yuan. Martyr

Cemetery has been expanded to 50 mu, while 14 houses in Phase II Yangtian New Village are under construction. Village party secretary in Wangjiaqiao said, "Different from other cemeteries, Longyi Cemetery is mainly used as an ecological, lawn and art tomb, equipped with a scenic pavilion and corridor, and some attractions in the same gate; it is a subsidiary of the entire company. Due to traditional Chinese feudal thought, it is not acceptable, so it is required to resolve the relationship between the cemetery and tourism. Therefore the gate for cemetery and attractions shall be separated, with cemetery at one side and spot (lake) and Pedestrian Street at the other side.

Jinqiao Science and Technology Industrial Park in **Gengcheng town,** as economic leader, has introduced six stationing in the park, out of 16 companies including Zhejiang Xingyue Copper, ANHUI JINDING BOILER CO.,LTD, Tianjin Houhai, Shanghai Shenmao, Anhui Keyu, Zhejiang Shenghao, Anhui Longsheng and others in 2009. Another key project refers to a modern agriculture demonstration area under construction in Raocun, covering 30,000 mu, with core area for 6000 mu, a project jointly invested and constructed by the provincial, city, district and county levels. The followings like Tiger Park, Houhai Folk Garden and Bamboo & Wood Garden have been completed in the demonstration area. A Tea Expo Garden and a tea garden are invested by a Shanghai-based company, used mainly for tea garden demonstration and high-end flower cultivation. In the tourism, the town has developed scenic spots, including Huangshan Tiger Park, Furong Valley and Dragon waterfall, but it is unable to evaluate the operations due to the data in tourists received and tourism receipts in details not available. Some tourism-related real estate projects like Meirui Forest Story and Houhai Folk Garden are provided.

In contrast, it is about ten years later for **Jiaocun** than Gengcheng Town, and almost zero project is stationed. It is the remoteness that limits the development in Jiaocun Town. Prior to 2007, there are many vehicles passing here, but due to relatively poor provincial highway and more corners, the vehicles gradually reduce. After Hongtu road is put into operation in 2008, generally the tourists choose Tangkou, so part of tourists is diffluent. At present, self-driving tourists are mainly coming here, but not stay for too long, and just go taste local dishes in

farmhouses, two or three of which are more famous, so many tourists come here especially. These tourists traveling by car with navigation device to west gate of Huangshan Scenic Zone feel so tired due to eight hours required for return in the same way from the mountain, and therefore most of them will not take this way to the mountain.

At present, a consensus to develop west gate has been wholly formed: on one hand, Jiaocun Town features the best road into the mountain, and walking plank way to Xihai spot is under repair and paid by Huangshan Scenic Zone. On the other hand, a road from north gate to west gate (i.e. the road from Chenglan Village in Gengcheng Town to Zhangcun) and a tunnel from Tangliu village to Gangcun in Tangkou are under planning. Road reconstruction to Xidi Hongcun has also been included in the 12th Five-Year Plan.

In 2012, some companies planned to invest RMB 25 million Yuan for an Anhua Villa in the town, while other investors planned to build camp base and club in the local, and such tourism-related property projects will be conducive to enhance reception capacity and attractiveness of local tourism. In addition, the town government is also committed to the development of religious tourism, and plans to develop a Buddhist culture-themed park covering about 300 mu, and provide statue display, vegetarian diet and other comprehensive services.

Summary:

Generally, a quite good situation appears in economic development in buffer zone. Less migrant workers in Tangkou and Gengcheng towns indicate that local employment opportunities are sufficient and able to meet basic needs of local residents. Project investment to some extent can be used as a standard for comparison of economic development among several adjacent regions. Currently, the tourism plays a largest driving and widest role in the economy in Tangkou Town, and meanwhile an irreplaceable role in industrial economy in the entire town. Other towns feature poor performance in tourism reception and scenic operations, lightly indicating that they fail to participate in Greater Huangshan tourism industry. But from deep views, raw materials (vegetables, fruits, etc.) for tourism reception and catering in buffer zone (Tangkou Town inclusive) are not produced in the local. Agricultural products including

rice and vegetables in five towns are only self-sufficient or sold at doorstep, but not involved in industrial chain in the whole Greater Huangshan Tourism Development.

3.2 Status Quo of Environment and Energy Utilization in Buffer Zone

The survey focuses on the following aspects, such as village appearance and scape, garbage and sewage treatment, noise and air pollution, energy utilization, as well as forest conservation in five towns.

3.2.1 Village Appearance and Scape

Overall, a fruitful effect has been obtained in village appearance and scape in five towns. Road construction, power grid renovation and other engineer bring about a uniform road in the village, storey limitation and appearance control of residential buildings near the road have standardized building style to some extent; close to mountain field and woodland, residential layout and structure are compact and style-based; with connected buildings, traditional Anhui style architecture has been retained in residential construction, ups and downs, well-arranged, black and white, with field vertically and horizontally, showing a southern Anhui village scape.

3.2.2 Environmental Protection

Poultry captivity has been implemented in the villages in five towns; Anhui Rural Cleaning Project has been carried out in the villages, with designated garbage bins in each village, and special cleaning staff hired for timing cleaning and unified treatment in the district.

Except for Jinqiao Village under Gengcheng Town (unified construction with Gantang Town), the sewage system is basically not established respectively in five towns. Because of the absence of industrial pollution, the sewage subject to domestic sewage from local residents is directly discharged into local rivers. Due to the lack of management for a long

term, the pollution in some rivers is becoming serious, for example, Machuan River in Tanjiaqiao Town and Xiaoyao Stream in Tangkou Town.

Figure 3-6 Trash Can (Shot at Tanjiaqiao)Town)

Figure 3-7 Gangcun Trash Pond in Tangkou Town

In addition, the residents in five towns are interviewed and present that there are no air and noise pollution in living community. Almost all the residents agree on that it is very important to protect the environment and wildlife.

3.2.3 Energy Utilization

Drinking water used by rural residents in five towns are basically from spring water near the mountains. The unified water pipes are connected to each household in the village, and certain water rate will be charged as per water consumption by households. Some remote and scattered villages still take groundwater by direct well drilling. The residents in Jinqiao Village, where Gengcheng town government seats, take purified tap water from Puxi River. The interviewed villagers are generally satisfied with the quality of drinking water. But the residents in Zhongdun Village under Tanjiaqiao Town also say that water and electricity in summer are relatively tight. Tanjiaqiao Town is currently building the reservoirs.

In townwide streetlight project, Tanjiaqiao Town first uses eco-friendly solar street lights; the villagers, being asked about the effects, present that lighting effect is still good except for rainy days. This is an example of the use of new energy in rural areas. Three main energies are used in the residents' houses: firewood, liquefied gas and marsh gas. The government vigorously promotes the use of marsh gas, but its utilization is not high in some villages with more migrant workers. "Because marsh gas shall be regularly cleaned up and replaced, and

young labor basically goes out, the elderly are used to firewood and liquefied gas."

3.2.4 Forest Cor

16 administrative villages adjacent to Huangshan Scenic Zone (20 prior to the merger) are responsible to take on important fire and forest protection per year. Management Committee of Huangshan Scenic Zone is mainly related to the departments in surrounding townships, including Management Committee office, comprehensive control and management office, and fire prevention office. According to the interviews (relevant information provided by fire prevention office), the responsibilities and benefits borne by 16 administrative villages adjacent to Huangshan Scenic Zone have been sorted out in buffer zone annually below:

The Management Committee will give each village (As per village-level standards before the merger) the financial subsidies of RMB 20000-30000 Yuan to carry out fire prevention, e.g. establishment of fire-fighting supply depot, wage payment of fire personnel as well as other day-to-day management. The second support refers to that each town in turn launches a project every year, and is responsible for infrastructure, road construction, and environmental sanitation. According to compensation fee of about RMB 10 Yuan per mu, out of more than ten thousand mu of commonweal forest, set aside from surrounding villages by the management committee, more than one hundred thousand Yuan will be accumulated for the projects from the villages in turn. Regular acceptance will be performed per year by

Management Committee of Huangshan Scenic Zone.

In 2001, 4 km isolation belt round Huangshan Scenic Zone has been delimited, where the residents of the towns and villages cut down all pine trees without any compensation required, and made a great sacrifice for the prevention of pine wilt disease. In recent years, adjacent villages also need to assume no security risk of the travelers into the mountains is caused.

3.3 Attitude and Perception of Buffer Residents

The monitoring targets to the objects, the residents in five towns in buffer zone of Huangshan Scenic Zone, with main survey questionnaires, supported by interviews, and then focuses on the residents in the villages under the jurisdiction of buffer zone and in adjacent villages to Huangshan. In the surveys conducted in March and September, total 608 copies of valid questionnaires were distributed, with 210 in Tangkou, 100 in Jiaocun, 141 in Gengcheng, 41 in Sankou, and 116 in Tanjiaqiao. A questionnaire regarding perception and attitude of community residents is related to sense of place, environmental attitude, resident engagement, perception of the impact of the tourism in Huangshan Scenic Zone as well as support of tourism development from the residents. Five point Likert scale has been used in questionnaire design, i.e. five alternative answers are given for each question in the scale, in the order of consent increments, corresponding to 1, 2, 3, 4 and 5. Descriptive statistical analysis has been performed on the results of the questionnaires.

3.3.1 Overall Attitude of the Residents

In buffer zone, 94.60% of the community residents, on average, are eager to develop the tourism, and 89.29% residents support the continued development of the tourism. The data show that local residents provide a positive attitude on the tourism industry, and generally hope and support the development of local tourism industry, for the purpose of more employment and income-generating opportunities.

3.3.2 Resident Perception of Economic, Community and Cultural Impacts of Tourism

Economic impact: 73.92% of the community residents on average in five towns consider that the level of economic development has increased, 67.60% of them believe that employment opportunities increase, 77.09% of them present that the tourism leads to local price rise, and 62.35% of them think that the gap between the rich and the poor has been widened. The data show that average economic level for four towns has been improved, and employment opportunities to local residents also increase. At the same time, the prices have risen, and to certain extent the gap between the rich and the poor is widened.

Social impact: 75.39% of community residents think that local roads, utilities and other facilities have been improved, and it is known through researches that, road hardening and upgrade construction in five towns are in progress. 72.56% of community residents believe that local medical conditions are improved, actually reflecting the attitude of the villagers to national health insurance system. 68.59% of the residents say that local education level has been enhanced; in the distribution of these schools, the education of primary schools can be basically realized near the village, and for those students in junior and senior high schools, generally far from home and not very convenient, some families move, or accompanying study is available. 76.07% of the residents believe that continuous demolition and building are largely attributable to new rural construction projects. Overall, the villagers most agree with the demolition of old buildings and an increase in new homes. Education recognition is lowest.

Cultural impact: 63.47% of the villagers present that cultural exchanges between the locals and outsiders increase, 32.94% of them think that local folklore and traditional culture are destroyed and forgotten, and 43.71% of them believe that local festivals and activities increase. It can be seen by the data that some villagers say they have less chance to communicate, due to less outsiders, and as for Tangkou Town regularly receiving tourists, the villagers present that the tourists come here but then leave quickly, with little cultural exchange. As for the festivals and activities, the villagers understand they are just recreational

activities, and the leisure mode is single.

Environmental impact: 71.39% of the villagers believe that environmental health conditions in the village has been improved, 21.44% of them say that local air pollution has aggravated, 26.09% of them present that local noise pollution has aggravated, 52.45% of them consider that local water body (river, lake, reservoir) is polluted, and 44.88% of them think that local solid waste increases. In the survey in September, 72.4% of the villagers say that the plant and animal resources around scenic zone have been protected, 72.3% of them think that environmental protection awareness of the locals increases, 66.8% of them present that the government has attached more important to the protection of local environment, 41.1% of them consider that agricultural landscape has been destructed, 32.2% of them believe that the quality of local environment is declining, as well as 30.1% of them state that undeveloped hilltops and hillsides have been destructed. The data show that, the villagers more recognized local sanitation improvement projects, and in practical survey, it is found that there is no garbage littering at both road sides, but with neat and clean road in almost all villages, and the villagers are also aware of cleaning in front of their doors. Air and noise pollutions are not serious, and most of the villagers consider that local air quality is good due to less noise from less industrial enterprises, and it is very livable in such natural environment.

3.3.3 Perception of Tourism Engagement by Community Residents

Survey results in March show that 65.86% of community residents in five towns on average are willing to engage in tourism-related jobs, and 62.99% of them are satisfied with Huangshan tourism development. Thus, only about 65% of community residents are willing to engage in travel-related jobs and are satisfied with tourism state, which are not too high. Subjectively, the villagers are willing to engage in travel-related jobs, but due to the limitations of individual labor skills, some villagers may not be qualified for such jobs, resulting in structural unemployment.

Survey results in September show that 73.2% of the interviewees concern about the tourism development of Huangshan Scenic Zone, 46.8% of them say that “the development of

local tourism is closely related to my family", 35.6% of them present that "what I do is tourism-related", 24.6% of them believe that "I participated in the management of local tourism development", 24.9% of them consider that "the development of local tourism is actually governed by the villagers and village collective", as well as 20.1% of them state that "I was involved in developing local tourism planning".

Different tourism engagement of community residents in towns is largely related to local radiation effect from Huangshan tourism development. For example, Tangkou Town is to largest extent influenced by tourism development of Huangshan Scenic Zone, as the most important tourist life service and reception base; 80% of the labor force is engaged in tourism, and there are some individual and private property owners in addition to working for tourism enterprises. In contrast, Sankou Town, because of the distance and resource factors, features less obvious driving effect from Huangshan Scenic Zone, and very few opportunities related to tourism employment has been provided for villagers.

3.3.4 Tourism Support from Community Residents

Some questions regarding tourism support from community residents have been added in the survey in September, showing 92.7% of the residents welcome the tourists, 89.1% of them support further tourism development of Huangshan Scenic Zone, 85.1% of them say the government shall increase zone tourism promotion, 79.7% of them believe that the villagers shall communicate with the tourists in cultural exchange, as well as 69.6% of them state that they are willing to engage in tourism development of Huangshan Scenic Zone; high mean and relatively small evaluation difference in this part indicate that the residents are friendly to the tourists, and support further tourism development of Huangshan Scenic Zone.

As for the question "Are you willing to participate in tourism training", 63.8% of the residents say Yes, only 11.6% of them say No, and 24.6% of them are neutral; the data show that most of the residents are willing to participate in tourism training, so as to engage in local tourism development. The item "Resident satisfaction of the state of local tourism development" shows lowest mean, 3.44, where 55.5% of residents are satisfied, 21.0% of

them are not satisfied, and 23.7% of them are neutral, which reminds local authorities to enhance the residents' satisfaction to gain more support during the development of local tourism.

3.3.5 Issues on Sustainable Tourism Development Concerned by Community Residents

Issues on sustainable tourism development concerned by community residents are mainly subject to the following four aspects:

First, **economic development.** Generally, most of the residents hope to develop the tourism greatly to solve the employment. However, the concerns of the towns and villages in different tourism stages are slightly different. In towns and villages, relatively immature in tourism, the villagers hold a positive and optimistic attitude to the tourism, hoping to stimulate and drive local economy, create more jobs, increase income, and improve life quality through tourism development. In those with relatively mature tourism, for example, Tangkou Town, what the villagers concern is slightly different from the villagers in other towns, and they in Tangkou want to improve local tourism management level, and enhance service quality in scenic zone. In tourism development model, they hope to introduce some more tourism projects, and investment from large enterprises or foreign traders. In the processing of agricultural and sideline products, tea growers want to raise tea prices, increase the added value through tea production and processing, improve profit margins, and create their own tea brands.

Second, **infrastructure and management.** The increase in people's livelihood projects will enable lives and working environment of more villagers to be improved. In transportation, it is different in transportation congestion in each town, for example, Tangkou Town receives more tourists, and some villagers reflect that it is required to take actions to ensure smooth transportation, while others consider that it is required to strengthen the management of outside cars due to more vehicle exhaust emissions; the villagers in towns and villages with few tourists are not perceived by transportation congestion. In addition, in tourism facilities, it

is necessary to consider both quantity and quality of accommodation facilities, and a little more entertainment facilities are required. In water supply and drainage, the villagers reflect that domestic sewage, not treated, is discharged directly into the ground or near the river. Medical and education issues are also concerned by the villagers.

Third, **land use and housing construction.** Some villagers believe that local limited land resources shall be orderly developed, and cannot be carried too far. A conflict between non-housing and development stagnation is proposed to be solved as soon as possible.

Fourth, **the views to the government.** Community cadres shall look to the grass-roots level, understand vulnerable groups, pay attention to the people's livelihood other than some showcase projects, as well as listen more to the views of ordinary people.

Summary:

Uneven development of villages and towns, and narrow tourism engagement. Currently, the tourism plays a largest driving and widest role in the economy in Tangkou Town, and meanwhile an irreplaceable role in industrial economy in the entire town. Other towns feature poor performance in tourism reception and scenic operations, lightly indicating that they fails to participate in Greater Huangshan tourism industry. But from deep views, raw materials (vegetables, fruits, etc.) for tourism reception and catering in buffer zone (Tangkou Town inclusive) are not produced in the local. Agricultural products including rice and vegetables in five towns are only self-sufficient or sold at doorstep, but not involved in industrial chain in the whole Greater Huangshan Tourism Development.

Deep attachment and feelings of local residents, and many factors influencing the satisfaction of the villages where they live in. During the construction of new rural areas, whether the villagers are satisfied with housing construction and drain design is reasonable will be taken into account in the evaluation of the satisfaction of the villages where they live in.

The residents generally consider local natural environment is valuable, and are in favor of the methods taken by the government for environmental protection by part of

tourism receipts. Almost all of the residents are in favor of continuing to protect the environment, but it is necessary to further guide and train the villagers regarding whether environmental protection or economic development is more important.

The residents are strongly desiring to engage in local tourism industry, but with a very small percentage actually involved in tourism industry. In decision-making related to the self-interests of community residents, the rights of community residents shall be further increased.

Tourism brings about economic, social, cultural and environmental impacts to the residents in buffer zone. As a coin has its two sides, the tourism development brings about the advantages and disadvantages, and 72.3% of the residents believe that the advantages outweigh the disadvantages. Visibly, the residents believe that the tourism brings about more benefits, greater than its disadvantages.

Support of the residents to local tourism industry is generally higher. It is reflected in the enthusiasm to welcome tourists and wishes of cultural exchange with the tourists.

4 Tourist Perception and Satisfaction

4.1 Tourist Attitude and Evaluation

4.1.1 Tourist Evaluation of Huangshan Tourism Resources

Tourists express high evaluation of natural scenery in Huangshan Scenic Zone, where 97.2% of the tourists agree or strongly agree beautiful natural scenery in Huangshan; the tourists recognize less Huangshan cultural connotation than natural landscape, but there are still 76.7% of the tourists agreeing or strongly agreeing rich Huangshan culture connotation.

4.1.2 Tourist Evaluation of Huangshan Tourism Services

The tourists show lower service evaluation of tourism service they accepted, mainly reflected in the quality of food, accommodation, scenic staff service, as well as tour guide service. 50.9% of the tourists consider that the food in the destination is general; in addition, 23.1% of the tourists do not think the food is good in the destination, and only 26% of the tourists agree or strongly agree the food is good. 48.9% of the tourists think the accommodation is general, while only 33.4% of the tourists say that it is good. Low evaluation of food and accommodation quality in the zone is mainly caused by higher prices, and the tourists are mentally unbalanced, and do not think it is worth the value. Tourists have evaluated service quality of staff in scenic zone, including those working cableway, hotel and patrol management, where only 52.1% of the tourists agree or strongly agree the service from scenic staff is good, while 35.9% of the tourists consider it is general. Tourists show higher evaluation of tour guide service than scenic staff, but still only 61.35% of the tourists agree or strongly agree that tour guides serve well. Group tourists believe that the guides have received their commission, so they shall provide the services. On behalf of entire group interests, tour guides cannot meet the requirements of individual tourists, resulting in mixed evaluation of service quality provided by tour guides in view of the tourists in the same group.

4.1.3 Tourist Evaluation of Huangshan Scenic Environment

Tourists show higher evaluation of overall scenic environment, where 83.2% of the tourists agree or strongly agree Huangshan Scenic Zone is clean and neat. Every day a large number of tourists enter scenic zone. So interpretation of tour guides by loudspeaker and tourist exchanges are likely to bring the noise. In questionnaire survey in May and September, tourists agreeing or strongly agreeing small noise in the zone account for 73.4% of total tourists, indicating that most of tourists playing in the zone will not be troubled by noise. The sanitation in scenic public toilets has been recognized by more than half of the tourists, but 35% of tourists believe that it is general or not sanitary, so it is required to be improved. As for the facilities in the zone, many tourists want to increase public toilets and rest facilities like stone benches. Scenic managers can consider the recommendations of the tourists, and will set public toilets and rest facilities at appropriate places in the convenience of the tourists. 65.77% of the tourists think it is convenient in Huangshan transportation, and such convenience includes internal and external transportation in Huangshan. With narrow sight-seeing way in mountain scenic spots and similar line, it is inevitably crowded in some places. To this end, 41.4% of the tourists think they feel crowded in scenic zone, while only 28.7% of the tourists consider it is not crowded. Queuing at cableway and famous attractions for picturing will cause crowded feelings to the tourists. Although perceiving crowded tour, most of the tourists can understand it, because people desire to travel to famous scenic spots, especially like Mt. Huangshan, a world famous mountain.

4.1.4 Contact between Tourists and Locals

Tourists, in particular group tourists, have less chance to contact community residents around Huangshan Scenic Zone. In satisfaction survey, only 29.3% of the tourists consider they have more contacts with the locals, while more than half of the tourists have less or no contact with the locals. With less contact between the tourists and locals, the tourists perceive weakly the enthusiasm and friendliness of the locals, and more than half of the tourists almost perceive nothing.

4.1.5 Other Experience Activities of the tourists

Tourists, besides appreciating scenic natural scenery, are rarely involved in other activities. Only 23.6% of the tourists say that they buy local souvenirs and crafts which they are satisfied, while only 27.4% of them present that they enjoy local cuisine, as one of the factors resulting in less exchange between the tourists and locals. Tourists buying and mailing postcards, according to observation and understanding of the researchers, are very little, mainly because of higher postcard price on the mountains, limited stay time, as well as fewer Postal Service points hard to find at the foot.

4.1.6 Overall Satisfaction of the Tourists

In the survey in March, 88% of the tourists are satisfied or very satisfied with overall evaluation of scenic zone, while 89.0% of the tourists consider that it is better or equal for actual experience than as expected. In tourist surveys in May and September, only 62.1% of the tourists consider that it is worthy, because of the high cost for scenic zone tickets and cableway or for food and accommodation charges. 76.8% of the tourists are satisfied or very satisfied with overall tourism, indicating that it is still required for scenic zone to improve the tourists' overall satisfaction.

4.1.7 Tourists' Willingness to Revisit and Recommend

The tourists after the travel may often be willing to recommend such destination to others or revisit Huangshan if they get a more satisfactory experience, so the tourists' willingness to revisit and recommend could be considered as the indicators of the tourist satisfaction. 78.5% of the tourists are willing to recommend Huangshan Scenic Zone to others, while more than 50% of the tourists are willing to re-visit.

4.1.8 Tourists' Perception on Safety

Sight-seeing order will affect the safety of tourists in the process, and 30% of the tourists consider that it is general while 46.42% of the tourists are satisfied with the order in the zone.

In addition, the security in cableway, trail, fence and other facilities will also affect the safety of the tourists. 77.5% of the tourists agree or strongly agree that the cableway in Huangshan Scenic Zone is safe, 60% of them agree or strongly agree scenic trail and fence are safe, as well as 30.15% of them consider that it is general in trail and fence security. It is found in the survey that the perception of the tourists on travel safety is related to external environmental conditions, for example, in 36 interviewees in March, 15 tourists mention road safety in the questionnaire (mainly for trail): On one hand, the tourists reflect the snow on the road has not been removed timely; on the other hand, it is subject to no fence or lower fence height.

4.2 Effectiveness of Interpretation System

Tourism interpretation system is a very important part of various factors in the destination, necessary basis for functioning education and service roles in tourist destinations, involving important sections including guide quality, interpretive sign design and tourist center, as well as one of factors impacting tourists' satisfactory travel experience. Effectiveness of interpretation system has been focused on in September, including channels of interpretation information accessible for the tourists, evaluation of channel role in tourism, tourists' reading of scenic interpretive signs along with the meanings of interpretation system to the tourists.

4.2.1 Channels of Interpretation Information Accessible for the Tourists

It is shown through the survey that most of traveling information for group tourists comes from tour guide's interpretation, and in addition, the followings like "Scenic signs for line and facilities" and "Attractions interpretive signs" would be the choices for most of people. 64% of the tourists employ scenic signs for line and facilities while 54% of them read interpretive signs. Visibly, it is important for the tourists to obtain the information from scenic line signs and attractions interpretive signs, especially for self-service travel. 21% of the tourists will ask staff in tourist center, but some tourists mention "no timely response in case of way-asking to staff". In fact, according to the survey, there is no full-time staff in Tourist Center of Huangshan Scenic Zone for advisory services, and who the tourists' consulting

generally refers to the sales staff of Tourist Center. A small number of tourists obtain interpretive information through electronic screen video, scenic brochures, geological museum, as well as books and CDs which, however, are used after the traveling. Tourists will have time to watch electronic screen video, and buy books and CDs in short stay in Tourist Center after the end of the traveling by cableway or walking down the mountain. It is observed that there are no promotional brochures at scenic tourist center. As for geological museum, it is arranged by sightseeing line of the tourists, and generally the tourists entering the mountains from Yungu Temple have no time to visit the museum, and only those walking down from the temple could possibly visit it.

4.2.2 Roles of Various Interpretation Channels for the Tourists Accessible to Interpretive Information

Overall, the followings including "Interpretation from tour guides and staff", "Scenic signs for line and facilities" and "Attractions interpretive signs" play a great role in traveling in the zone, while those like "Geological Museum", "Brochures", "Electronic screen video playback", and "Publications" function little for the tourists in scenic zone, which is mainly related to interpretation channels used by the tourists; in case of no use of any channel, it is remarkably less importance. In fact, as for "Electronic screen video playback", most of the tourists are not willing to stand to watch it in waiting room with fewer seats (≤ 50), so it is weak to obtain the information. In addition, due to more tourists in one-day trip, they will not spend valuable experience time on viewing electronic interpretation, thus resulting in less effective screen. Why geological Museum is used less mainly lies in tour guides may usually ignore the interpretation of Geological Museum because of a large proportion of group tourists. Furthermore, most of geological works in Geological Museum are related to Huangshan, and more professional to most people, so it is less attractive for ordinary tourists.

4.2.3 Tourists' Reading of Scenic Interpretive Signs

Although a considerable part of the information comes from scenic interpretive signs, including line and attractions interpretive signs, poor reading of the tourists about attractions

is available. Only 32% of the tourists will carefully read interpretive signs, 50% of them slightly read or focus on what they are interested in and the tourists “Only reading attractions interpretive signs at rest time” and “Never reading interpretive signs” account for 8% and 10%, respectively.

Tourists show high evaluation of line signs in Huangshan Scenic Zone, but it is necessary for the zone to further improve scenic road sign system. 57% of the tourists consider that “(existing) road signs are very clear and very helpful”, and 24% of them present that “(existing) road signs are prominent and easy to find”, indicating reasonable and systematic settings of road signs are affirmed. But there are still as many as 26% of the tourists saying “No sign at intersection, hard to find the right way”, and 32 person-time suggestions (24.24%) have been found in the columns of comments / recommendations on “Less road signs”. Scenic managers shall improve the existing road and line signs as the case may be.

The majority (66%) of the tourists could obtain what they need from attractions interpretive signs. Other tourists show low evaluation of what attractions interpretive signs tell: 23% of the tourists consider that the content is not interesting enough and they have no interest in reading; 12% of the tourists present that “Information is not professional, comprehensive and correct”; 10% of the tourists believe that “The content is too unprofessional and hard to understand”. In addition, some tourists mention “Digging of Huangshan culture (in scenic zone) shall be performed, and currently there is nothing or little thing to reflect Huangshan culture”. Therefore, scenic managers can consider the update of interpretive information in a timely manner, or the way where the information works, to consciously strengthen the culture of Mt. Huangshan, which is, after all, a world natural and cultural heritage, so it is necessary to publicize Huangshan cultural connotation.

4.2.4 Meaning of Interpretation System

Interpretation system can affect the tourists' travel experience, such as “Increase in traveling values”, “Curiosity excitation to new things”, “More fun in traveling” as well as

"Reduction of unsafety sense in traveling". Most of the tourists present that the interpretation from tour guides plays an educational role to some extent, to increase educational values in the process. In addition, the tourists can deepen the understanding of natural environment and culture in Huangshan through interpretation system. Although 79.89% of the tourists consider that interpretation system can activate environmentally friendly behavior, there are still 73.8% and 59.3% of the tourists recommending the scenic zone shall make more efforts to manage environmental protection and uncivilized behavior.

5 Economic Impacts of Tourism

5. 1 Tourism Receipts

According to the monitoring data this year, Huangshan scenic zone received 2.743999 million tourists in 2011, with 8.96% up on a year-on-year basis; and the cableway operations carried 4.795459 million person-times of tourists, with 11.24% up on a year-on-year basis; the annual operating income of Huangshan Tourism Development Co., Ltd. exceeded RMB1.81942 billion, with 10.13% up on a year-on-year basis.

Tourists received and tourism receipts in surrounding low-mountain attractions are shown in Table 10-12 in Section 3.2.3 in details:

5.2 Tourism and Employment

It is learned through this survey that there are 2299 employees in stock company in the zone, where there are 2245 regular employees and 54 seasonal employees. There are about 967 local employees in Tangkou Town (278 in scenic zone, 1191 in Huangshan District, approximately). The male-female proportion is as follows: 50.7% male and 49.3% female.

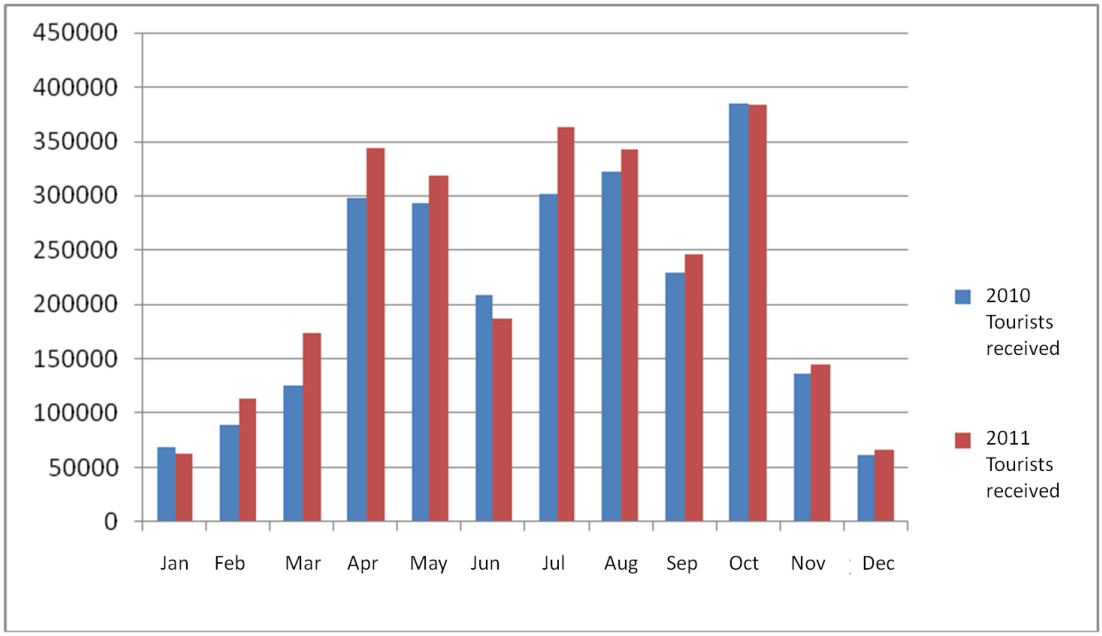
It is learned through this survey that the operations facing tourists, like porter, sedan chair lifting and stall for snack and handicraft, have been contracted by the scenic zone to Tangkou Tourism Development Co., Ltd, which, taking administrative villages in the towns as the units, would distribute the jobs based on population. After a quota is assigned to each village, eligible villagers will finally obtain such jobs by lot drawing. These chosen villagers will then do such jobs in the year and get paid.

See Section 3.2 for tourism employment in surrounding villages in details.

5.2 Seasonality of Tourism

It can be seen from Figure 9 that the number of tourists received by Huangshan scenic zone varies seasonally. The busy season lasts long, with the number of tourists remaining at high levels from April to October (7 months in total), and relatively low from November to

next March (5 months in total). In 2011, the number of tourists received by Huangshan scenic zone in the busy season accounted for 79.58% of all tourists of the year, and the ratio of the number of tourists in the busiest month (October) to that in the slackest month (January) was 6.12.



Source: Statistics Sect., Huangshan Tourism Development Co., Ltd

Figure 5-1 Distribution of Tourists Quantity Received by Huangshan Scenic Zone in 2010-2011

6 Organization and Management

6.1 Results in Scientific Protection of Resources and Environment

Governing body of Huangshan Scenic Zone can be traced back to “Huangshan Construction Committee”, initiated and established Xu Shiying, the former Prime Minister of Republic of China in 1931-1934 (for the purpose of “Protect resources and environment, develop tourism economy, and brighten famous scenic site”) to create a "National Park" management model.

In 1982, Huangshan Scenic Zone first started the preparation of “Master plan of scenic spots” in China; in 1989, Anhui Provincial People's Congress promulgated “Regulations of Huangshan Scenic Zone”, an earliest legislation in China on protection and management of scenic spots.

In 1998, the 22nd special session of the World Heritage Committee said “Huangshan is an outstanding scenic spot, a well-managed heritage site, and an Asian demonstration under excellent management with a complex scenic spot visited by a large number of tourists.

In 2005, “Master plan of Huangshan Scenic Zone (2007-2025)” was prepared by the commissioned Tsinghua University and refined the concept of sustainable development: 1) to balance scientific conservation and sustainable development; 2) to focus on public education and tourist experience; 3) to co-ordinate orderly development inside and outside scenic zone; 4) to show the feature and culture; and 5) to deal with theory forward-looking and realistic operation well.

In recent years, Huangshan Scenic Zone Management Committee (HSAC) has conducted a series of exploration around systematic strategy, lean management, people-oriented services, and digitization support:

- The followings, such as “Specifications of enclosed rotation retirement in scenic

zone", "Specifications of conservation of famous ancient trees" and other standards, led to prepare by HSAC, have become provincial standards; "Requirements of trail construction in scenic zone" and "Scenic environment cleaning requirements" were applying for national industry standards.

- A "Special action to prevent pine wilt disease" was launched, with "Biological isolation belt", 100 km long and 4 km wide, constructed. A research project "Huangshan biodiversity conservation" (the project was totally invested for $ 13 million, with survey and research of local animal and plant resources in the range of more than 9,800 square kilometers in Huangshan City).

- "Sightseeing on mountains and living at the foot" was promoted; best and maximum capacity of tourists received were reasonably identified per day; "Winter tour" was promoted for coordinated development of seasonal tourism; product line management was carried out and "prediction/reservation/warning" mechanism was used for "tourist capacity control in peak and low seasons" in holiday travel.

- Cooperative with national ministries, the following projects, like "Digital demonstration base of national scenic areas" (China Landscape and Historic Sites Association/Chinese Institute of Electronics), "National tourism standardization demonstrative unit" (National Tourism Administration), "National low-carbon tourism demonstrative area" (All-China Environment Federation/ China Tourist Attractions Association), "National demonstration area of tourism-related meteorological services" (China Meteorological Administration), and "Huangshan base of national tourism-related safety and emergency rescue" (State Administration of Work Safety / National Tourism Administration), have been launched in succession.

- Educational functions from Huangshan Heritage Museum, Geological Museum, Huangshan Painting and Calligraphy Institute and Tourist Center would be further improved in order to systematically demonstrate Huangshan natural and human resources, sustainable development course, along with management guidelines and

requirements of scenic zone.

- Partnered with more than 30 media, sustainable development was promoted to the public widely; public service ads “Quality travel – together with you” was shot in conjunction with National Tourism Administration and China Central Television; Huangshan joint declaration “Green living - low-carbon development” was published together with more than 20 well-known scenic spots in China.
- Cooperation relationship with more than 20 well-known universities and research institutions has been deepened: “Huangshan base for the research of tourism sustainable development & mobile postdoctoral center of Nanjing University”, and “Sun Yat-sen University Huangshan Tourism Research Base” have been co-founded; well-known experts have been hired as “chief scientists” of Huangshan resources protection and environmental management.

6.2 Pacesetter in Tourism Development

Huangshan is, as a tourist attraction, the “beginning” of modern tourism in China.

In 1979, Deng Xiaoping, Chinese leader, visited Huangshan and published his famous “Huangshan talks”, which opened a prelude to the reform and opening up of China tourism industry, and then Huangshan became the “beginning” of reform and opening up of China tourism industry.

In 1996, “Huangshan Tourism” was listed (China's first “Total factor tourism concept stock”); “Huangshan Tourism” was prized as well-known trademark in China.

In 1999, the tourists received by Huangshan Scenic Zone exceeded 1 million per year; in 2007, the figure exceeded 2 million; in 2012, it reached up to 3 million. More and more people experienced “globally-recognized natural beauty” and touched “colorful multiculture” in Huangshan.

Huangshan Tourism Development Co., Ltd formed by HSAC (business scope covers the following industries including tourist attractions, restaurant, travel agency, tourist

transportation, culture, e-commerce, catering, and tourism commodity logistics) has possessed total assets of RMB 5.07 billion Yuan at the end of 2011, with more than 50 subsidiaries and more than 5,000 employees, and was ranked in "China top 20 Tourism Groups" in three consecutive years from 2009 to 2011.

HSAC, cooperative with Huangshan municipal government, launched "Smart Huangshan" project, and integrated effectively the projects including tourist attractions, star hotels, travel agencies and farmhouse (complete regional tourism planning for tourists, and also win-win for HSAC and stakeholders).

In 2010, HSAC proposed "Transformation development" (focus on earlier and quicker transformation in development concept; innovative and flexible transformation in development mode; first-class and elaborate transformation in quality improvement; and large-scale and strong transformation in development path). Therefore "12th Five-Year Development Plan of Mt. Huangshan (2011-2015)" was prepared. By 2015, annual tourists received will be close to 3.6 million, with total tourism receipts over RMB 6 billion Yuan. "Huangshan Tourism" will, continuously leading the tourism, radiate and affect sustainable tourism development in southern Anhui and even Yangtze River Delta region.

6.3 Exchange with International Counterparts

HSAC not only insists on "green" development, but also focuses on opening-up development and strengthens international exchange and cooperation, around the objectives of "Take on historic mission, and protect world natural and cultural heritage sites; seize the opportunities of the times and build a world-class destination".

HSAC has concluded friendly relationships with Swiss Jungfrau (2002), Yosemite National Park in the United States (2006), Petrified Forest of Lesvos-Greece (2008), and Whale Watch Kaikoura (2011) successively; Recently, HSAC will conclude as a friendly park with Banff National Park (the link with Yellowstone National Park as well as well-known parks and world heritage sites in Australia, Russia, Brazil and other countries or regions is accelerating).

HSAC has been first prized with “Honorable Mention of cultural landscape protection and management” by UNESCO in Asia (2000) and “Global Destination Management Award” by WTTC (2010).

Since March 2008, HSAC has cooperated with international organizations including GSTC / UNWTO / UNEP / UNF (Global Sustainable Tourism Council, United Nations World Tourism Organization, United Nations Environment Programme, and United Nations Foundation) to promote the construction of (Huangshan) observation area for sustainable tourism development of World Heritage Sites (first in the world). And HSAC constructed, under the cooperation with the said international organizations, “Standard (Huangshan) experimental zone of sustainable tourism in global destinations” (first batch in the world) in 2012.

In the celebration of the 60th anniversary of Pacific Asia Travel Association (PATA) in 2011, HSAC elaborated the concept and connotation of “Good tourism” (friendly travel and tour), promoted by PATA (referred and innovatively developed by UNESCO).

In order to implement “Millennium Development Goals” by the United Nations, HSAC was, as the only Asian representative in the industry, involved in the drafting and formulation of “Global Sustainable Tourism Destination Criteria” (GSTC-D) which was officially released in 2012; in the same year, HSAC drafted and formulated basic framework of the standards of “scenic” world excellent destinations modeled on Huangshan, China, cooperative with World Centre of Excellence for Destinations (CED).

HSAC will, in the future, continue to adhere to the duty and mission of “Protection first, development-driven; management-innovated, Huangshan harmony”, and then steadily be committed to “four-in-one” vision and practice for “minimal environmental impact, maximize economic output, optimized social impact and bets tour experience”.

7 Conclusion and Suggestions

7.1 Unremitting Scientific Protection of Resources and Environment in Huangshan Scenic Zone

3) Institutional setup and policy support

It is learned from monitoring in two rounds that the division of responsibilities for natural and cultural resource conservation, and environmental protection in the Huangshan scenic zone is very careful, and resource conservation and environmental protection is highly valued at all levels. A policy system that is more sophisticated than those of other mountainous scenic zones has been established and well implemented.

Deficiencies: Due to this careful division of responsibilities, the channels of information sharing among departments are not smooth enough. It is advised to further strengthen inter-departmental collaboration (e.g., resource conservation and tourism management departments), and information sharing.

4) Scientific protection and management

After many years of exploration, systematic, scientific management experience and conservation methods with Mt. Huangshan characteristics have been formed in respect of environmental protection and the conservation of famous ancient trees in the Huangshan scenic zone, including “one tactic per tree”, “IT-based monitoring” and “enclosed rotation retirement”. Through continuous monitoring, and cooperation with scientific research agencies and universities, the monitoring and scientific research system of the Huangshan scenic zone is increasingly sophisticated.

Except the conservation of natural resources, much effort has been paid on the preservation and renovation of cultural relics in the Huangshan scenic zone, including cultural relic identification, census and manual monitoring.

Strict environmental protection management and monitoring is practiced in the

Huangshan scenic zone. The monitoring data of 2011-2012 shows that the current aquatic, acoustic and atmospheric environment quality of the Huangshan scenic zone is excellent, all environmental quality standards are met, and the quality level was maintained during 2006-2011.

Deficiencies: the Huangshan scenic zone is closely associated with the surrounding communities and the low-altitude attractions in respect of resource conservation and environmental protection, but through two rounds of monitoring these two parts are relatively independent and there are still some problems in environmental protection in the surrounding areas (e.g., the water quality of the Xiaoyao Stream is deteriorating). In the future, environmental monitoring and resource conservation in the surrounding areas shall be further strengthened. On the other hand, it is advised that routine monitoring points in the Huangshan scenic zone shall be set up in consideration of the core zone and the buffer zone.

7.2 Different Tourism Development in Surrounding Communities

In this round of community monitoring in five towns in buffer zone of Mt. Huangshan Scenic Zone, 16 administrative villages adjacent to the zone have been focused on.

Based on the survey results, the awareness of resource conservation of residents in the surrounding communities is enhancing in general, and tourism plays a significant role in driving the development of all communities of Tangkou Town, especially in the employment of local residents and the development of surrounding low-altitude attractions. Running low-altitude attractions has become an important means of generation of tourism income in Tangkou Town. In addition, since a great part of the workforce of these low-altitude attractions is composed of local residents, the development of low-altitude attractions has a more direct and significant role in promoting local employment and increasing the income level of residents. It plays a relatively weak role in driving the economies in the other four towns. Towns have their own advantages of resources, and mainly develop agricultural economy, supported by other industries at different levels, such as light and reception

industries in towns: the farmhouse in Tanjiaqiao Town at East Gate is more prosperous, while low-mountain areas including East Huangshan and Shimen Canyon are operated relatively well; Economic Industry Park in Gengcheng Town at North Gate has been constructed as one leading industry driving GDP of the town; Jiaocun and Sankou, due to slightly inferior geographical location, is subject mainly to agricultural economy, tourism, with tourism reception industry in its infancy.

Overall, a good development emerges in surrounding communities; the deficiencies are shown below: the link between Huangshan Scenic Zone and surrounding communities is not enough, resulting in no engagement of the products from agricultural production in buffer zone into local tourism industry chain. It is required to consciously guide and support surrounding industrial economies to develop together with Huangshan tourism, and strengthen industry ties with surrounding communities.

7.3 Further Development and Improvement of Tourist Service Functions

One of the key functions of the Huangshan scenic zone is to provide rest opportunities, education events and diversified services to tourists on the basis of resource conservation. The tourist management objectives proposed in the Master Plan 2006 are as follows: (1) On the basis of resource conservation, tourists are satisfied with the safety, availability, accessibility, diversity and quality of facilities, services and rest opportunities offered by the Huangshan scenic zone. (2) Tourists and the pubic understand and enjoy the resources offered by the Huangshan scenic zone to the current generation and later generations, and also understand and accept the corresponding resource conservation work.

It is shown through present monitoring survey of tourist satisfaction that, most of the tourists show high evaluation of Huangshan tourism resources, and are satisfied with the traveling generally, and more than half of the tourists say they will re-visit or recommend this zone. Tourists show general evaluation of scenic safety and lower evaluation of scenic service quality, mainly reflected in food, accommodation, scenic staff service and tour guide services.

This shows that the tourists considerably recognize Huangshan Scenic Zone overall, but at the same time it is required for the zone to further improve several basic services like food, shopping and accommodation. It is found through the survey that the tourists say generally that they have less contact with the locals, and it is simple and single in other local experience activities except for sightseeing. This shows that there is a certain gap between actual situation and objective realization of deep tourist experience, worthy of further study.

In addition, it is learnt through the survey of interpretation system effectiveness that the tourists mainly use road and direction signs, with less concern about scientific interpretation functions of the attractions. This shows that the functions of tourist education shall be further improved. On one hand, the sign system of the scenic zone shall be further improved (presently, this system is not planned in a unified manner, and English signs and interpretations shall be further enriched and improved, along with fun; comprehensive development of interpretation content shall be focused on); on the other hand, publicity and education on the cultural heritage of Mt. Huangshan shall be strengthened, and diversified tourist segments (cultural, ecological and international tourists, etc.) developed actively.

7.4 Use of Monitoring Information

One of the primary objectives of this project is to establish systematic data and information collection channels, share collected information with all departments and stakeholders (communities, tourists and other partners) of the scenic zone, drive their joint participation, and eventually promote the sustainable tourism development of the Huangshan scenic zone.

Monitoring will be conducted in the form of routine and topical monitoring mainly. The following suggestions are proposed for monitoring information, indicators and data obtained every year:

4) Making effective use of monitoring information helps to realize the objectives of the Master Plan of the Huangshan Scenic Zone. By collecting indicators and data sequentially, and comparing them at stages, we can measure how well the objectives

of the Master Plan are realized at different stages.

5) Making effective use of monitoring information helps all management departments of the Huangshan scenic zone to make decisions scientifically. It is advised to establish a historical monitoring database at the Huangshan Management Committee from the project startup in this year, put monitoring reports, and indicators and data therein on record, and apply relevant information to routine decisions on tourism management.

6) Making effective use of monitoring information helps to strengthen the information communication between the Huangshan scenic zone, and the surrounding communities and tourists. Tourism planning and management cannot exist independent of the key subjects of the destination—"local communities" and "tourists". This project will help establish a channel of information communication with local communities and tourists. By learning the attitude of tourists and the satisfaction of tourists, we can adjust the management objectives pertinently, and take effective measures to handle relations with residents in the surrounding communities and improve tourist experiences. On the other hand, many indicators and data can be used directly as an educational tool for residents in the surrounding communities and tourists, so that they better understand and accept resource conservation and environmental protection.