Recommendations for Sustainable Development of Ankang Tobacco Growing Area

Hatao YANG∗, Ke SUN, Feng ZHU
Ankang Branch of Shaanxi Tobacco Company, Ankang 725000, China

Abstract Sustainable development of high quality characteristic tobacco is the only path for future development of China’s tobacco industry. In combination with realities of tobacco development in Ankang tobacco growing area, this paper made analysis on factors restricting sustainable development of Ankang tobacco growing area. On the basis of actual situations, it came up with recommendations including establishing scientific basic tobacco field protection system, gradually cultivating professional tobacco farmers and strengthening tobacco technician team construction, improving scientific and technological innovation, implementing standardized technologies, improving tobacco production organization mode, and improving tobacco production security mechanism.

Key words Ankang tobacco growing area, Sustainable development, Cause analysis, Recommendations

1 Introduction
Tobacco is the foundation for development of the tobacco industry. Characteristic road of high quality tobacco must take the road of sustainable development[1-5]. To keep sustainable development of tobacco production, we must solve a series of problems, including where to plant tobacco, who plant tobacco, and how to plant tobacco. Characteristic sustainable development road of tobacco is an essential technical strategy conforming to and supporting development of Chinese style cigarette and the only way for future development of Chinese tobacco industry[6-7]. Ankang tobacco growing area has more than 30 years of tobacco growing history and is the major tobacco production area of Shaanxi Province in ecological tobacco production area around Qinling Mountains. Ankang has gifted ecological conditions for production of characteristic high quality tobacco. Its annual tobacco planting area is up to 12000 hm². The tobacco growing area is mainly distributed in the area with elevation of 600 – 1000m. In Ankang, there are more than 10000 tobacco planting farmer households. The purchase volume remains in 18000 to 22000 tons. All of these indicate that Ankang is a typical mountainous tobacco growing area. It has registered "Shandijin" tobacco brand, formed unique mountainous, selenium-enriched, ecological low tar content, and sweet and soft style, won favor of many industrial customers, and got into the rank of famous tobacco brands, such as Chung Hwa, Sehtwolves, Shuangxi, Tarzan, Huanghelou, and Haomao, etc.

2 Overview of the study area
Ankang is located in the southeastern part of Shaanxi Province, north of the Daba Mountains and the southern foot of the Qinling Mountains, at the intersection of Shaanxi Province, Sichuan Province, Hubei Province and Chongqing Municipality. The Han River (Hanshui) crosses it from west to east, forming a natural landform of "a plain between two mountains". Its terrain is mainly mountain (about 92.5%), hilly area (5.7%) and plain area (1.8%). The elevation is 170 – 2964.6m. Ankang has subtropical continental monsoon climate with distinct four seasons, clean environment, and rich vegetation. Its forest coverage is higher than 60%. The annual average sunshine hour is up to 1790.4 h, the mean annual temperature is 15.4℃, the annual frost-free period is 252 days, annual average accumulated temperature ≥10℃ is 4738.3℃. Besides, it has abundant rainfall and the annual average rainfall is 855.2 – 1100 mm. Han River, crossing Ankang from west to east, is an important water source protection area of the South-to-North Water Diversion Project. In Ankang, the soil is mainly yellow brown soil, rich in selenium, and has the name of "selenium valley of China". In the division of national tobacco planting area, Ankang belongs to the area of Upper and Middle Reaches of the Yangtze River suitable for planting tobacco.

3 Factors restricting sustainable development of Ankang tobacco growing area and cause analysis
3.1 No professional tobacco farmer cultivation system and serious loss of tobacco farmer team Tobacco farmer team is a key issue for sustainable development of tobacco. It solves the problem of who plant tobacco in the new trend of tobacco development. Ankang is a labor service export city. With rapid and diversified development of social economy, more and more rural young labors become migrant workers. Those left behind are basically middle and old tobacco farmers (more than 73% tobacco farmers are 40 – 60 years old)[8]. In addition to quickening urbanization, many tobacco farmers move to towns and cities. As a result, much tobacco field is left idle. Furthermore, the land circulation mechanism is not perfect and limited land resource fails to be effectively integrated. For this, many tobacco farmers are not enthusiastic for...
planting tobacco, leading to gradual drop of professional tobacco farmers.

3.2 Low educational level of tobacco farmers and difficult to cultivate professional farmers Most tobacco farmers are old and unwilling to accept advanced tobacco production technology, and their innovation awareness is not strong. All of these will restrict sustainable development of tobacco growing area. Since the comparative benefit of tobacco planting is lower than other industries, and tobacco farmers have few opportunities to take part in training, tobacco planting has decreasing attraction to high quality tobacco farmers.

3.3 Few agricultural machines and tools suitable for mountain area and low mechanization level Mountain area takes up 92.5% in Ankang tobacco growing area. Cultivated land is separate and has high slope, which brings great difficulty to mechanized operation. Limited small agricultural machines and tools only solve the problem of ploughing and ridging, but the operating efficiency is relatively low, thus it seriously influences large-scale development of tobacco growing in mountainous area.

3.4 Low coverage of infrastructure construction and high difficulty of maintenance In Ankang tobacco growing area, there are few large land parcels. In addition to limited labor, finance and material force for infrastructure construction, it is difficult to realize full coverage. The infrastructure for tobacco industry implements once-for-all-subsidy policy. For example, tobacco irrigation facilities and maintenance of tobacco field mechanized ploughing road need high input of labor, finance and material. As a result, it is more difficult to maintain infrastructure necessary for production of mountainous tobacco.

3.5 Rise of tobacco production cost and low comparative benefit With rise of tobacco purchasing price and increase of tobacco subsidy policy, tobacco output value is also increasing. However, the tobacco planting cost is also increasing, mainly reflected in increase of labor cost and production means cost (fertilizer, film, and fuel, etc.), and net income of tobacco farmers is not increased significantly. At present, tobacco industry has no comparative advantage compared with tea, silkworm and turmeric industries. Comparative advantage of tobacco industry obviously drops, so tobacco farmers are not enthusiastic for planting tobacco.

3.6 High influence of natural disasters and imperfect risk security mechanism In Ankang mountainous area, agricultural production relies largely on climate. In recent years, frequent occurrence of natural disasters (such as much rainfall in 2010 and 2011) leads to too much water content in tobacco, which is difficult to bake. In 2013, the temperature was too high after tobacco seedlings were transplanted and the rainfall was too little. Much tobacco field lacked water seriously, leading to tobacco early flowering and decrease of effective tobacco leaves. Besides, in recent three years, some areas suffered different levels of wind and hailstone disasters and the yield was seriously influenced. In addition, the disaster subsidy mechanism and risk evaluation system are not imperfect. It is difficult to implement subsidy policy. At the same time, the subsidy amount is limited, so the tobacco planting risk is high, and farmers’ benefits fail to be guaranteed practically.

4 Recommendations for sustainable development of Ankang tobacco growing area

4.1 Strengthening land resource integration and actively exploring scientific basic tobacco field protection system Firstly, it is recommended to establish reasonable land circulation policy. On the legal, voluntary, paid and orderly principle, it is expected to realize large-scale operation of land through cooperative shares of land, large household operating through contracting and industrialization management, to realize optimum allocation of limited farmland resource. Secondly, it is recommended to carry out survey of ecological suitability for tobacco planting, establish scientific and feasible basic tobacco field protection system, establish medium and long-term tobacco development plan, improve basic tobacco field information file, practically implement the basic tobacco field protection system and measures, and stably promote the tobacco ecological distribution. Thirdly, it is recommended to optimize tobacco planting distribution and realize relative large-scale planting. Fourthly, it is recommended to establish reasonable tobacco field rotation system. Fifthly, it is recommended to scientifically grasp level of fertilizer application and properly increase the application of organic fertilizer on the basis of strengthening scientific application of fertilizer, implement GAP management, strengthen prediction and forecast of plant diseases and insect pests, shift the prevention and control of plant diseases and insect pests to "stressing the prevention and combining prevention and control", and improve the construction of comprehensive prevention and control system with the green prevention and control as the major part.

4.2 Improving overall quality of tobacco farmers and gradually cultivating professional tobacco farmers, and strengthening construction of tobacco technician team With rapid development of rural economy and continuous advance of modern tobacco agriculture, the structure of tobacco farmer team also has great change. Traditional individual farmer and separate tobacco planting mode has started to change to large and modern production mode. Therefore, organization mode of tobacco production must adapt to changes of new trend. In the development mode of specialized planting households, family farms and cooperatives, cultivating professional tobacco and building tobacco technician team have become the key to sustainable development of tobacco production.

4.2.1 Cultivating professional tobacco farmers. With development of modern tobacco agriculture, professional tobacco farmer team construction is the key to stabilizing tobacco farmer team. Developing specialized tobacco planting farmers and family farms is the inevitable trend of future agricultural development. It is recommended to work out detailed technical skill training plan according to age structure, educational level and technical level, en-
hance professional training of tobacco farmers, and improve pro-
duction technical level and operation and management level of to-
bacco farmers. In sum, it is expected to cultivate a professional
tobacco farmer team having vitality, grasping technologies, being
good at management, and specialized production and industrialized
operation.

4.2.2 Strengthening construction of tobacco technician team. It
is recommended to carry out vocational skill training and evalua-
tion, to improve comprehensive quality of technician team; es-
establish and improve innovation dynamic management evaluation
system. Every year, companies should conduct examinations of to-
bacco production technologies and knowledge for tobacco techni-
cians, evaluate satisfaction of tobacco farmers for tobacco techni-
cians, and implement the last one elimination system, to fully
stimulate work enthusiasm of technicians. Through strengthening
evaluation and management methods, it is expected to enhance
their enthusiasm and sense of duty, establish a high quality,
professional, efficient grass-roots tobacco production technical
service team with standardized management and high quality of
services.

4.3 Improving scientific and technological innovation abil-
ity, implementing standardized technologies, establishing to-
bacco production organization mode, and improving tobacco
production security mechanism

4.3.1 Always sticking to innovative development and constantly
improving tobacco technological level and management level. For
weak sections of present tobacco production, it is required to carry
out scientific research technical tackling, build scientific, reason-
able and practical extension system and corresponding mechanism,
popularize new technologies, and produce high quality tobacco
with outstanding mountain area characteristics. Besides, it is re-
quired to solve the problems of relatively single varieties, not in
place of reasonable rotation system, and precise application of fer-
tilizer, as well as professional harvesting skills, actively explore
tobacco baking ways, and stably promote specialized and classified
tobacco purchase.

4.3.2 Strengthening construction of scientific and technological
demonstration parks. It is expected to bring into play demonstra-
tion role through scientific organization and production demonstra-
tion, as well as demonstration of new technologies and methods.

4.3.3 Innovating upon organization mode. Intensified produc-
tion is a precondition of "reducing cost and labor and increasing
benefits". Thus, it is required to promote construction of special-
ized tobacco farmer cooperatives, explore operating mechanism
and standards for mechanized farming, seeding, ridging, plant
protection, and classification. In addition, it is expected to bring
into play functions of "two factories" and increase integrated utili-
ization efficiency of facilities. Furthermore, it is required to
strengthen research and development of light-duty agricultural
machinery and tools suitable for mountainous area and increase effi-
ciency of mechanized operation in mountainous area. Also, it is
recommended to actively guide the development mode of coopera-
tives, realize process style of key link businesses, orderly
operation, and standardized technologies, improve specialized
service level and service ability, and establish specialized tech-
ological extension and service system, increase service efficiency,
reduce service cost, and promote sound development of tobacco
farmer cooperatives.

4.3.4 Establishing and improving tobacco production security
mechanism. It is recommended to further strengthen the communi-
cation and coordination with local government and relevant depart-
ments, and accelerate the establishment of tobacco production dis-
aster risk security mechanism. Specifically, it is required to
provide hailstone prevention facilities, constantly improve disaster
prevention and control system, reduce losses of tobacco farmers
due to disasters, eliminate worry of tobacco farmers, and realize
conscious, voluntary and rest assured tobacco planting as soon as
possible.

5 Conclusions
With diversified development of present social economy, sustain-
able development of tobacco has become a common challenge
faced by many tobacco production areas. Through study and analy-
sis of existing problems in the sustainable development of Ankang
tobacco growing area, we reached the conclusion that increasing
income of tobacco farmers is a precondition for sustainable devel-
opment of modern tobacco agriculture. Firstly, it is required to
stabilize support policies and protect benefits of tobacco farmers.
Secondly, it is required to optimize planting distribution, cultivate
professional tobacco farmers, change production mode, reduce
production cost, strengthen cooperation of industry and commerce,
and stabilize market foundation of tobacco industry. In all, it is
required to fundamentally solve the problem of where to plant to-
bacco, who will plant tobacco, how to plant tobacco, and why to
plant tobacco.

References
[1] LIU GS. Discussion on sustainable development of tobacco industry in China
[2] HAN YD. Analysis on economic factors affecting sustainable development of
tobacco industry in China and the countermeasures [J]. Journal of New To-
[3] CHENG BY, ZHANG GH, CHENG L. Practice and reflection about the de-
velopment of modern tobacco agriculture [J]. Journal of Henan Agricultural
[4] HE ZH. On the sustainable development of tobacco leaf production [J]. Ac-
[5] HUANG WQ, XIONG Y. On producing status of tobacco leaves in northwest
Hu’nan and sustainable development countermeasures [J]. Modern Agricultu-
[6] LI YP, GUO FY, DING YF, et al. Exploration and consideration on charac-
teristic road for tobacco sustainable development in He’nan [J]. Journal of
[7] HUANG ZX. Discussion on developing modern tobacco agriculture to pro-
 mote sustainable development of tobacco [J]. Guangdong Agricultural Sci-

(To page 79)
activities, but there is no targeted and substantial remediation for the damaged soil, for the reason that there is no standard to follow. In the future implementation of these projects, it is necessary to add the assessment indicator of soil remediation. The implementation of soil remediation measures and related acceptance work should be completed by professional companies and organizations to truly improve the quality of the soil. (v) It is necessary to step up publicity efforts to improve public awareness of soil pollution prevention and control. The contaminated soil remediation is a big project consuming considerable manpower, material and financial resources, and relying on the government and relevant departments is not enough. It requires people to enhance the knowledge of soil pollution, and raise awareness of prevention and control. The related environmental monitoring departments should promptly track, monitor and release the soil pollution information of various regions, in order to provide theoretical data support for soil remediation and enhance people’s understanding of soil pollution.

References


