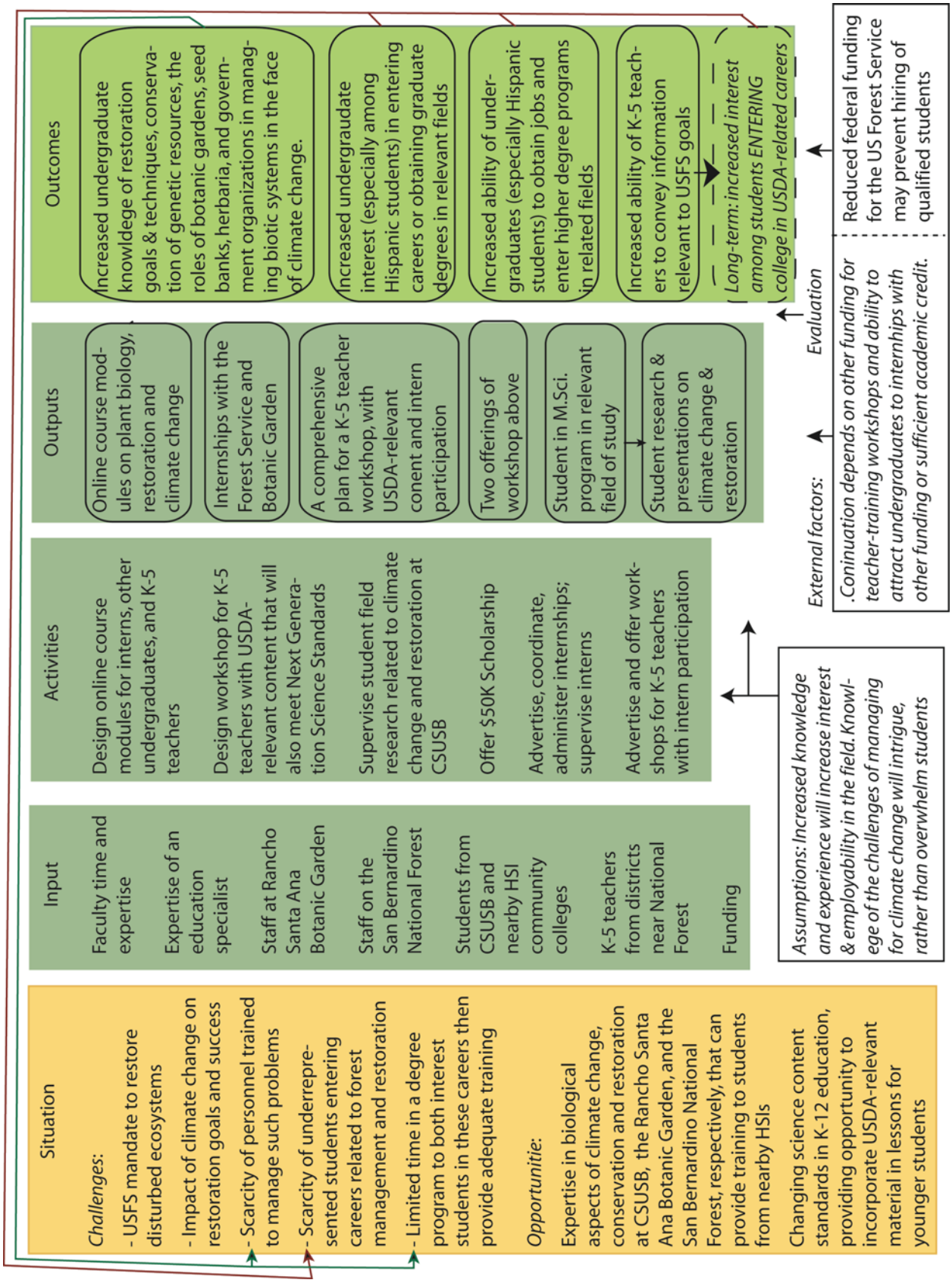
Situation
Challenges:
- USFS mandate to restore disturbed ecosystems
- Impact of climate change on restoration goals and success
- Scarcity of personnel trained to manage such problems
- Scarcity of underrepresented students entering careers related to forest management and restoration
- Limited time in a degree program to both interest students in these careers then provide adequate training
Opportunitie:
Expertise in biological aspects of climate change, conservation and restoration at CSUSB, the Rancho Santa Ana Botanic Garden, and the San Bernardino National Forest, respectively, that can provide training to students from nearby HSIs
Changing science content standards in K-12 education, providing opportunity to incorporate USDA-relevant material in lessons for younger students
Input
Faculty time and expertise
Expertise of an education specialist
Staff at Rancho Santa Ana Botanic Garden
Staff on the San Bernardino National Forest
Students from CSUSB and nearby HSI community colleges
K-5 teachers from districts near National Forest
Funding
Activities
Design online course modules for interns, other undergraduates, and K-5 teachers
Design workshop for K-5 teachers with USDA-relevant content that will also meet Next Generation Science Standards
Supervise student field research related to climate change and restoration at CSUSB
Offer $50K Scholarship
Advertise, coordinate, administer internships; supervise interns
Advertise and offer workshops for K-5 teachers with intern participation
Outputs
Online course modules on plant biology, restoration and climate change
Internships with the Forest Service and Botanic Garden
A comprehensive plan for a K-5 teacher workshop, with USDA-relevant conent and intern participation
Two offerings of workshop above
Student in M.Sci. program in relevant field of study
Student research & presentations on climate change & restoration
Outcomes
Increased undergraduate knowldege of restoration goals & techniques, conservation of genetic resources, the roles of botanic gardens, seed banks, herbaria, and government organizations in managing biotic systems in the face of climate change.
Increased undergraudate interest (especially among Hispanic students) in entering careers or obtaining graduate degrees in relevant fields
Increased ability of undergraduates (especially Hispanic students) to obtain jobs and enter higher degree programs in related fields
Increased ability of K-5 teachers to convey information relevant to USFS goals
Long-term: increased interest among students ENTERING college in USDA-related careers
Assumptions: Increased knowledge and experience will increase interest & employability in the field. Knowledge of the challenges of managing for climate change will intrigue, rather than overwhelm students
External factors:
.Coninuation depends on other funding for teacher-training workshops and ability to attract undergraduates to internships with other funding or sufficient academic credit.
Evaluation
Reduced federal funding for the US Forest Service may prevent hiring of qualified students